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THE PATHOGENIC MICROBE OF DISTEMPER IN DOGS, AND ITS USE FOR PROTECTIVE INOCULATION.

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DISTEMPER is a disease which attacks the whole dog tribe before maturity, as a rule, and, in my opinion, is due to a bacillus whose identity I believe I have established. Distemper is a specific infectious disease (one attack confers immunity); and as with other zymotic diseases, so here, some animals appear to be naturally immune against it.

After exposure to infection an incubative period of variable duration follows; the symptoms which then appear are dulness, loss of appetite, and Fever; the nose at the same time becomes hot and dry, and a husky Cough, Constipation, or Diarrhœa are commonly present. The eyes and nose now discharge freely, the fluid being at first watery but purulent later on. Finally, the animal emaciates rapidly, while the coat becomes hard and staring. In about three weeks, should no complication ensue, the dog begins to regain condition and recovers. Unfortunately, complications generally do supervene, for few cases occur in which Bronchitis is not a symptom. Pneumonia carries off a large number of those attacked, whilst Jaundice, Fits, and Diarrhœa account for the death of many others. As sequelæ we find Chorea and Paralysis.

The mortality is very high, and 90 per cent. has been given as the loss from this disease. It is nevertheless doubtful whether the mortality is really so high, as it is a notorious fact that mongrels are peculiarly exempt from malignant Distemper. In well-bred dogs, however, 90 per cent. fairly represents the average of fatal cases.

To give a slight idea of the fatal effects of the disease on highly

bred canine stock, I will give but one or two examples, although these might be increased by hundreds.

TABLE I.—*Distemper contracted at Shows.*

Show.	Date.	Owner.	No. Shown.	Deaths.	Ultimate Damage at Home.
Crystal Palace	1887	Mr. A.	2	1	23 deaths.
Barn Elm	1888	Mr. A.	2	1	15 deaths.
Brighton	1889	Mr. B.	1	1	13 deaths.
,,	,,	Mr. C.	2	1	Entire kennels attacked.
,,	,,	Mr. D.	2	2	17 deaths.
Crystal Palace	,,	Mr. E.	3	0	6 deaths.
Total	—	—	12	6	74 deaths.

Such a table will give a small notion of the frightful annual loss occasioned by exhibiting puppies for the first time at our principle dog shows.

Experiments Undertaken to Discover the Pathogenic Micro-organism.—In the beginning of June, 1889, I inoculated gelatine tubes with the mucus from the nose of a collie suffering from Distemper complicated by Pneumonia. Four tubes were inoculated, and in three days a growth of a similar character was apparent in each, the growths liquefying the gelatine. Shortly after this Mr. Sewell procured for me a puppy suffering from Pneumonic Distemper. From this dog further tubes were inoculated with the discharge from the nose, and in a like period similar growths were to be seen as those grown from the collie. This puppy was then destroyed.

A drop of each growth, stained with fuchsin and examined with a Zeiss D, showed three micro-organisms, namely, two bacilli, which I will distinguish as A and B. In addition, micrococci were present in far larger quantities than either of the bacilli. The organs of the puppy that came from Mr. Sewell were also examined, after being hardened in alcohol and stained by Gram's method. In addition to the lungs and trachea, the liver, spleen, and kidneys were found to contain similar micro-organisms. From the condition of the organs, and the fact that they contained in large quantities the same micro-organisms as had been observed in the gelatine growths, I was led to test these growths by experiment, in order to prove whether one of the micro-organisms might not be perchance the active agent producing the disease. I therefore applied to a gentleman to do the inoculations for me, choosing as subjects two of my own very inbred basset hounds.

Puppy No. 1 was inoculated by syringing the nasal fossæ with the growth contained in a gelatine tube, and puppy No. 2 was immediately after the inoculation placed with No. 1. In eight days both puppies were down with the disease, and afterwards showed signs of Pneumonia, No. 2 having undoubtedly taken the disease from sniffing the nose of puppy No. 1.

No. 1 was destroyed on the tenth day from the first symptoms, and its organs were found to be filled with all three micro-organisms, just like the puppy first examined. This fact seemed

Fig. 1.—From a photograph taken by Dr. Copeman, of St. Thomas's Hospital, (oil immersion).

to prove that the growths contained the pathogenic microbe of Distemper, and as the disease had been produced with tubes of the eighth generation, I now tried to isolate each organism.

No difficulty was found in separating out and obtaining pure cultures of bacillus A and micrococci by means of ordinary plate cultivation; both liquefy gelatine. The bacillus produces an opaque liquefaction, a yellowish scum forming on the surface of the tube; whereas the micrococci grow with a clear liquefaction, forming a thick deposit of a chalky appearance at the bottom of the tubes.

Two puppies, Nos. 3 and 4 were each inoculated with one of the

growths respectively, No. 3 being inoculated with a tube containing bacillus A, and No. 4 with micrococci without the animals showing any symptoms of disease. The inoculations were now reversed, No. 4 being inoculated with bacillus A, No. 3 with micrococci, again without result. Both puppies were now inoculated with both micro-organisms, and suffered no harm. From such negative results I felt justified in supposing that neither bacillus A nor the micrococci were the cause of the disease. I now isolated bacillus B, photographs of which, taken by Dr. Copeman of St. Thomas's Hospital, are annexed.

The bacillus B, like the other micro-organisms found, also liquefies gelatine, descending as a flaky mass in the almost clear fluid, which is covered by a whitish scum. Finally, when the whole of the gelatine is liquefied, the flakes gather at the base, and, if stirred, appear to be of a ropy consistency.

Puppy No. 5 was now inoculated in the nose, and in a week it began to show unmistakable signs of the disease. Another puppy, No. 6, was inoculated in the nose with the previously described micrococci, and kennelled with puppy No. 5. Three days after No. 6 was placed with No. 5, No. 5 began to show signs of Pneumonia, and was destroyed. Again, three days after the death of No. 5 No. 6 showed symptoms of Distemper, and was then also destroyed.

Microscopic examination was now made of the organs of both dogs, when the organs of No. 5 were found to be filled with the micrococci, those of No. 6 to be full of bacillus B. In other words, No. 5 previously inoculated with bacillus B contracted Distemper from the inoculation, and then showed symptoms of Pneumonia directly it was brought into contact with No. 6. No. 6, on the other hand, whose organs were found filled with bacillus B, showed no signs of Pneumonia, although it had been inoculated with micrococci, but of Distemper. Doubtless, had it been allowed to live, pneumonic symptoms would have appeared.

The only legitimate conclusion is that No. 6 contracted Distemper from No. 5, and that in all probability bacillus B is the cause of the disease. At the same time, not feeling satisfied, and having obtained a licence to carry out experiments on this disease, I inoculated two puppies, Nos. 7 and 8, with bacillus B. In five days both puppies showed well-marked Distemper, when No. 7 was destroyed, but No. 8 was inoculated with the culture containing the micrococci. No. 8 then showed symptoms of Pneumonia, and was destroyed. On examination the organs of No. 7 were found to be filled with bacillus B, those of No. 8 containing few bacilli B, but numerous micrococci; the disease is, therefore, produced by bacillus B.

TABLE II.—*List of Experiments, with Dates, Inoculations, and Growths used.**

Cases.	Growth used and Date of First Inoculation.	Growth used and Date of Second Inoculation.	Date of first Symptoms.	Results.
1	D July 10	—	July 18	Mild Pneumonic Distemper.
2		—	July 18	Mild Pneumonic Distemper.
3	A August 6	—	—	No results.
3	C August 20	—	—	No results.
3	A & C August 30	—	—	No results.
4	C August 6	—	—	No results.
4	C August 20	—	—	No results.
4	A & C August 30	—	—	No results.
5	B October 20	—	Oct. 28	Mild Pneumonic Distemper.
6	C October 31	—	Nov. 7	Mild Distemper, contracted from No. 5.
7	B December 17	—	Dec. 21	Mild Distemper.
8	B December 25	C December 25	Dec. 22	Mild Distemper, followed by severe Pneumonia.

* Growth D equals the 3 micro-organisms; A equals bacillus A; B equals bacillus B; C equals micrococci.

Experiments in Attenuation and Protection.—Now none of the growths with which these experiments were made had been grown at such a high temperature as that of the dog, viz., 101·5° F. In fact, they were all cultivated in a cool room at the top of my house, at a temperature varying from 60° F. to 70° F., and I can only come to the conclusion that the successive generations of cultures which have been produced from the originals and grown at a very reduced temperature to that which the pathogenic microbe flourishes in the dog, has resulted in attenuating the virus, as the inoculations with bacillus B were followed by a mild attack of Distemper only. Mr. Garnett, of Bromley Cross, having placed two very valuable bloodhound puppies at my disposal, I inoculated them both with bacillus B.

TABLE III.

Case.	Growth used and Date.	First Symptoms.	Result.
9	B January 7	January 13	Mild Distemper.
10	B January 7	January 13	Mild Distemper.

If the fact that the original growths were obtained from dogs suffering from the disease in its most acute form be taken into consideration, and if we also remember that bloodhounds, when

attacked, show less resisting power than any other variety of dog, except the basset hound, it is clear that bacillus B had become attenuated. The temperature of both Mr. Garnett's hounds never exceeded 102·5° F., even at the time they were suffering from the effects of the inoculations.

Protective Treatment.—A growth of bacillus B having been heated to 60° C. for ten minutes, 5 cubic centimètres of this culture were taken and added to 5 cubic centimètres of previously sterilised water. This quantity was now injected under the skin of two puppies (Nos. 11 and 12), but no ill effects followed. After allowing a week to pass for the virus to take effect, the same two dogs were inoculated in the nose with a pure culture of bacillus B, and to make the experiment more demonstrative, the animals were placed in a kennel which had been inhabited by the dogs previously suffering from Distemper. No disease following, I determined to repeat the experiments, a list of which is now given :—

TABLE IV.

Case.	Inoculation subcutaneously with Modified Virus.	Inoculation through the Nose with Non-modified Virus or Exposure to Infection.	Results.
	Date.	Date.	
11	December 26	January 2	No Distemper or Symptoms.
12	December 26	January 2	No Distemper or Symptoms.
13	January 13	January 20	No Distemper or Symptoms.
14	January 13	January 20	No Distemper or Symptoms.
15	Control experiment	January 20	Distemper January 28.
16	January 15	Placed with diseased dogs January 22	Distemper January 30; died.
17	January 15	Sent to Liverpool Show January 27	Mild Distemper; Pneumonia.
18	January 15	Ditto	Mild Distemper; Pneumonia.
19	January 15	Ditto	Mild Distemper; Pneumonia.
20	January 15	Ditto	Mild Distemper; Pneumonia.
21	January 15	Ditto	No Distemper; Pneumonia.
22	January 27	Ditto	Mild Distemper; Pneumonia.

The above table is worth of attention on various grounds. It will be observed that the dogs in Cases 11 to 14 were inoculated hypodermically with modified virus in order to protect them from the disease. Case No. 15, on the other hand, contracted the disease, being the only animal not protected by the injection of modified virus. Case No. 16, the only one in which death resulted, deserves notice. This puppy was only seven weeks old, and it was thought better not to give it a full dose of the protec-

tive material. As a result, it was only given a very diluted dose, suitable, as was thought, to its age. But in point of fact it was evidently given too little, especially as it was afterwards exposed to contagion by the most malignant virus. Case No. 15 is somewhat remarkable from the fact that two puppies, not intended to be used for experiments at all, became infected through carelessness, as I neglected to carefully disinfect my hands after handling Case No. 15. Cases 17, 18, 19, 20, and 22 exhibited symptoms of the disease seven days after exposure to infection at Liverpool.

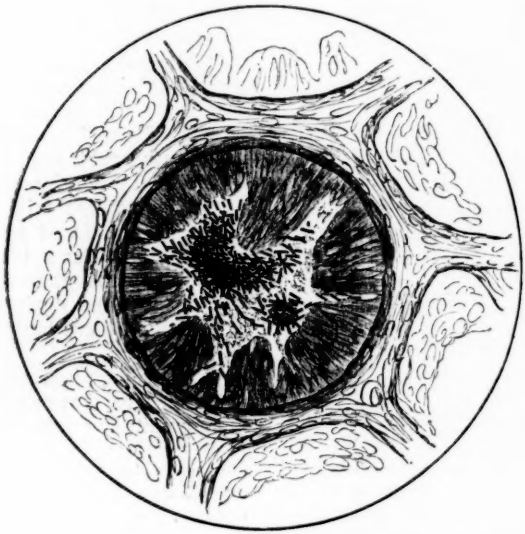

Fig 2.—Section of small bronchial tube, showing bacilli. Bronchial tube drawn from a section; surroundings diagrammatic.

When I saw them five days after their illness commenced, there was no running at the eyes or nose, and no cough, except in the case of two. In fact, their owner informed me that they were much better than they had been. They were at that time in a fair way to recover, when the weather became intensely cold, with a keen east wind, and to this cause we must attribute the subsequent Pneumonia. In Case 21 the veterinary surgeon at Liverpool, Mr. Sumner, states that the animal showed no symptoms of Distemper, but suffered from Congestion of the Lungs and Pleurisy. In every case the animals have recovered, or are doing

so, and this is all the more remarkable, since a large number of malignant cases of the disease have appeared in non-protected puppies which were at the same show, some of which have died and others are likely to succumb.

Finally, we have the statement of a St. Bernard breeder who allowed me to inoculate two puppies out of seventeen. Distemper had broken out in his kennels. Of these seventeen puppies fifteen are dead, the survivors being the two inoculated puppies, who, although kennelled with those which died, have shown no symptoms of the disease.

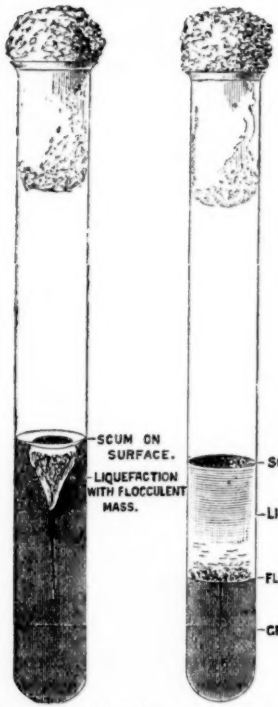

Fig. 3.—Third day after inoculation. | Fig. 3.—Tenth day after inoculation.

Without presuming too much, I think we may assume that while five cubic centimètres of modified culture, added to five cubic centimètres of sterilised water, is sufficient to protect against mild Distemper as produced by the culture of bacillus B, it is not quite strong enough to render animals immune against the extremely virulent bacilli met with at shows.

One thing, however, is clear, namely, that some kind of immunity is produced, and it is possible that dogs inoculated with ten centimètres of undiluted material will prove to be immune against the stronger virus.

It will have been noticed that death in Distemper results from a complication, namely, Pneumonia. In pure uncomplicated Distemper we find a large number of bacilli and few micrococci only, whilst in Pneumonic Distemper the latter are present almost to the exclusion of the former. This fact opens up the following important question, namely: Can a micrococcus, such as is found in the dog, and which, when injected through the nose, has been proved by experiment to have no evil effect on the dog (see Cases

3 and 4), have a dangerous result or cause complication when associated with the bacillus B, as in Case 1, or when succeeding the bacillus, as in Case 8. That one of the micro-organisms is often associated with the other appears highly probable. It is a well-known fact that if a puppy contracts Simple Distemper, it will infect others with a similar mild form of the disease. In an exactly similar manner we find that if a puppy suffers from Pneumonic Distemper, it will affect others with the same variety of the disease. Finally we know that if a dog suffering from uncomplicated Distemper be brought into the presence of one suffering from the pneumonic type of the disease, that animal will very soon develop the malignant type.

In conclusion, the bacillus is the primary cause of disease, namely, Distemper; the micrococcus is the cause of the complication, namely, Pneumonia; whilst the two when combined produce Pneumonic Distemper. Judging from facts observed in the course of my investigations, I think it highly probable that there are two kinds of micrococci to be met with in the nasal fluid of distempered dogs, and it is perfectly possible that two or more kinds of micro-organisms may cause Pneumonia.

For instance, the micrococci that were injected in Case 8 differed in appearance in their mode of growth, and in the severity of the symptoms produced by their inoculation from the micrococci found in the first cultures. May we not assume that the bacillus causes lesions in the lung, and in so doing prepares the ground for the micrococcus?

PAPILLOMA OF THE HOOF.

BY F. RAYMOND, F.R.C.V.S., ETC., ARMY VETERINARY DEPARTMENT, WOOLWICH.

From time to time these troublesome cases arrive at Woolwich from out-stations, but, I am happy to say, very rarely. Perhaps it is for the reason that they have not ended satisfactorily in my hands, or perhaps it is because they are always very difficult to cure. No doubt, one or two cases may have been patched up sufficiently to do a farmer's work for a time, but the great majority have ended in dire failure. In fact, the least unsuccessful cases were only checked in their course by constant attention.

The records of the few cases of Papilloma which I have seen are no longer in my possession, but my memory serves me sufficiently to allow, what I may, perhaps, be permitted to call, samples of different methods of treatment to be given.

The first case of Canker I ever saw was in a small farm-yard,

but I had nothing to do with the animal. The greater part of the foot was implicated, and it was dressed with powdered sulphate of copper, daily. The case was doing as badly as possible, and ought to have been destroyed, as I suppose it ultimately was. I have seen several cases checked for a time with sulphuric acid, and dressings of tow, and protection from damp, and so on.

In my own practice, I had a case which was treated at first with tar and tow, and kept dry; afterwards more energetically, with nitric acid, and pressure, etc. As this produced little effect, chromic acid was freely applied; the sole (which was diseased) became firm, but an abscess burst at the coronet, causing a "quittor." In the end the horse was destroyed.

In another case, I removed the diseased horn, exposed the Papilloma, applied pure carbolic acid, and failed again.

In another case, I proceeded as above, and removed the Papilloma bodily with the knife, but it recurred in a few days; it was once more excised, and re-appeared again and again.

In yet another case I tried perchloride of iron, unsuccessfully.

Needless to say, both my military and civilian friends have been consulted, in hopes that I might improve my treatment. It is true that here and there a case was reported to me which was said to have terminated in a cure, but these cases appear to be very rare. It was partly on account of my own discouraging experience, and partly from hearing of other failures, that I determined, when the next case was admitted, to adopt a palliative treatment, and to keep the patient at work as long as possible. However, when the case I am about to record was admitted, other counsels prevailed, and the course of operative treatment which I ultimately adopted appeared to be completely successful, while the patient remained in my hands, and as I heard no more about it after it left me, I was about to publish the case as a cure, *pro bono publico*. In order, however, to be quite sure, I made personal inquiry, and I am sorry to say that the information I received was not satisfactory.

I confess frankly to a feeling of disappointment; it would have been infinitely more agreeable to have recorded a genuine cure, but as I cannot do that, I offer a *bona-fide* failure, in hopes that some other member who has been more fortunate, may follow on. The following is nearly an exact copy of the case I had prepared for the Journal when I thought the horse was cured:—

Horse No. 90, was admitted on the 19th July, 1889, suffering from a lacerated wound of the near-hind frog—half of it was torn off. The animal was seventeen years old, and had "thrushy" frogs all round. The wound was trimmed, dressed with iodoform, covered with carbolic tow, and a bar shoe applied.

The frogs were dressed with calomel. In due course the

wound healed, and the frogs became sound, except the near hind one. On the 25th September, distinct evidence of Papilloma became apparent in this foot. As the animal was not lame, I carried out my idea of palliative treatment, and sent the horse to work. Later on, the animal was returned to me lame, and I found that the Papilloma had extended. Still, I was indisposed to adopt operative treatment, for reasons already given. I argued the matter thus:—Papilloma is, or causes, hypertrophied state of the secretory structures it attacks; the parts are enlarged, and more or less disorganised—at any rate, as far as their secreting power is concerned. It would therefore appear to be next to impossible to get resolution—in other words, sound horn, to grow from the diseased area. On the other hand, if the whole of the diseased papillæ are removed surgically, where is horn of any kind to grow from?

However, for special reasons, I decided to operate. I also determined to vary the operation somewhat, and the dressings also.

The Papilloma occupied the sole, from the seat of corn to near the point of frog, and seemed rather inclined to spread to the wall near the heel; and there was a rather bad "thrush" in the cleft of the frog, but the remainder of the horn, though ragged, was fairly sound.

The horse was cast and chloroformed, and my Farrier-Major was directed to make the following cuts with a Fred Smith's saw, namely: 1, Through the horn at the back of the heel; 2, through the wall from the coronet to the sole, about opposite the quarter nail; 3, from the lower end of the last cut to the point of the frog, through the sole; 4, to connect the lower end of cut No. 1 with the end of cut No. 3; 5, to connect the upper end of the cut at heel (No. 1) round the coronet, close up with the upper end of cut No. 2. By this means I isolated the whole of the diseased portion and also some of the surrounding healthy horn. The isolated horn was removed with pincers. The diseased part was now bare; it was hypertrophied, both as regards the papillæ and the substructure, and there was a healthy zone all round. All the remaining horn on that side of the foot was rasped until it was nearly as thin as paper. The hæmorrhage was controlled to a very considerable extent, with hot water containing perchloride of mercury (1-1,000). The parts were then dried with carbolised tow, liberally dressed with iodoform, over which a layer of boracic lint was applied; the whole foot was next enveloped in a pad of carbolic tow and bandaged. For three days the dressing was not touched, as the horse's temperature remained about normal. I then had the foot treated with chromic acid and tar (1-20), encased

in carbolised tow, and bandaged as before. The "thrush" was treated with calomel. On the 4th February the place did not look quite so well, but only for one day; but with extra care in the dressing, it resumed its favourable course. On the 1st March the horn had grown down somewhat, and was quite firm; the "thrush was cured." No further treatment was adopted beyond keeping the heels low and the stable floor dry. In the first week of April a surgical shoe was put on, and the horse was discharged for duty. As I heard no more about it, I thought that my original views had been disproved by my own hands; unfortunately it was not so, for the case was unable to withstand the ordinary routine of a Battery stable, and succumbed again, I am informed. My treatment was somewhat similar to that Mr. Greaves has employed in some cases.

The question has occurred to me whether Papilloma of the horse's hoof is the same or similar to Papilloma of the human subject, as described by some authors. In order to explain my meaning I will quote from some of the works I have by me. Dr. Fowler gives a very general definition thus:—Papilloma: Any tumour which, when seated on the surface, gives rise to excrescences, which, according to the nature of the surface, appear in the form of villi, papillæ, or warts." Littré and Robin define Papilloma as "a variety of Epithelioma, characterised by the augmentation of the size of the papillæ of the skin or mucous membranes, with induration and thickening of the sub-dermis underlying the whole extent of the parts attacked." They give a very good description of the way in which the malady gradually invades the surrounding structures. Dr. Green states:—"In the Papillomata the epithelium is *homologous*, being situated only upon the surface of the papillæ, and in no case growing within their connective tissue basis. In the Epitheliomata, on the other hand, it is *heterologous*, and it is met with at the base of the tumour in the subjacent connective tissue. It is important to remember that a growth which is primarily a simple Papilloma may subsequently become an Epithelioma."

I have never undertaken a histological study of the disease, but in all my cases the sub-structure appeared to be invaded by some growth, as it was considerably thickened, and I would also add that the general appearance of the tumefied portion corresponded with Littré's and Robin's description. There is another point wherein both diseases would appear to have something in common; a moist climate is supposed to assist in the development of Cancer, and we all know what a bad effect wet has upon "Canker."

The importance of this part of the subject will, no doubt, strike

all practitioners who have much to do with Papilloma. Epithelioma, even in human surgery, has many victims; if, therefore, we are really dealing, not with a benign growth, as one is rather disposed to imagine from its name, but with a malignant one ninety-nine times in a hundred, the question arises as to whether we are justified in throwing a horse out of work for a long time while we perform a series of more or less useless operations; or whether it is not preferable to adopt a palliative course of treatment as long as possible, and then to dispose of the animal, on the principle that the first loss is the lesser?

I have ventured to offer these remarks merely as suggestions, which may be of use in opening a discussion on the subject. I am not aware that it has been brought forward for some time, so that the more recent experiences of the disease would be of great value, if made public.

A CASE OF OPEN PAROTID DUCT.

BY THE SAME.

THE patient was admitted with a wound, about an inch long, at the border of the lower jaw, near the masseter muscle. There was a constant, though very slight, oozing of a transparent fluid, but when the animal was fed, saliva spurted out in great quantities and with considerable force. I think I noticed that there was rather more discharge when hay was given than when corn was; but I may be wrong on this point, because, knowing how difficult these cases are to cure, I thought it advisable to proceed at once, and somewhat energetically, to work. The wound was, therefore, carefully cleaned and dried, and a smart blister applied to the wound, and about three-quarters of an inch all round it. The head collar was removed to prevent rubbing, and the animal turned into a loose box and watched. It was neither fed nor watered. There was no discharge for two days, but then I noticed a little moisture. The blister scab was then most carefully and gently removed as far as possible, and another blister applied. The animal was still fasted. In two days (that is four days from the first treatment) the parts were quite dry, but I did not feed the animal until the evening of the fifth day. The wound after the feeding was found to be quite dry, and caused no further trouble, and, of course, the animal was thenceforth fed and watered as usual. In about eight days the whole scab came away, leaving only a little scurf, the wound had quite cicatrised, so the animal was discharged cured.

Remarks.—The patient, when admitted, was very fat, and

therefore a suitable subject for the treatment. It was also narrowly watched, in case it should appear to suffer. But horses seem to bear abstention from food with considerable equanimity, providing they are in good condition, not worked, and warmly clothed. This animal was somewhat hollow in the flank. At the end of its fast, however, it neither drank nor fed ravenously, but went to work quietly and methodically, as if nothing had occurred.

THE CASTRATION OF HORSES.

BY JAS. COOKE, F.R.C.V.S., SCARBOROUGH.

In two recent issues of the Veterinary Journal, I notice articles on the subject of castration. The operation is one that we cannot be too well versed in, seeing there is a certain amount of competition with the travelling gelders, who are sometimes smart at their work; and unless the veterinary surgeon can operate in a quicker and more satisfactory manner than the "gelder," the low standard of fees must continue to be accepted, or that branch of veterinary surgery will drift into the hands of the specialist. My experience until recently was, that casting and fixing the colt for operation is more difficult than the operation itself. The old method of putting a small noose around the animal's neck, throwing him on his back, and tying all four limbs, proved so unsatisfactory to me that I was led to find out a safer and easier method of casting. By this old system, unless a very good man is at the head, the loop frequently slips off the neck and over the head, the ropes consequently becoming loose. I remember three cases of fractured femur as a result of this method of fixing; in each case the injury happened to the left thigh—two of the accidents occurred in my own practice, and were amongst the first five colts I castrated. Although I mostly operate on all animals, except colts and bulls over two years old, in a standing position, I am not favourably impressed with the standing operation in colts, so far as my experience goes, having operated on some in that manner with injured backs which I did not consider fit to cast. I found it took a longer time than usual to operate, and it was more difficult to the operator. I cast with a rope or the hobbles, but I prefer the latter, and I generally have one or two assistants to do the tying and fixing, as I don't think it advisable for the operator to waste his strength, but to keep himself calm and ready for the operation or any case of emergency. My method of casting with a rope is, first, to make a large loop in the middle of it, and then place it over the animal's head and well on to the withers. I prefer a loop large enough to lie on the points of the shoulders,

as the animal is not so liable to slip it over the head, which sometimes happens with a small loop if the man at the head allows the colt to get its nose down to its knees. The ends of the rope are then passed between the fore legs, and one round the outside of each hind leg above the hock, bringing it forward below the rope, and passing it through the loop at each side of the neck, in a similar way to that described in Fleming's Surgery. The object now is to cast the animal on the near side and secure both hind limbs, leaving the fore legs free. To do this, slip the ropes down into the hind fetlocks; the rope on the off side must be pulled straight backwards on a line with the animal's off hind leg, at the same time the near side rope must be pulled sideways, the assistants on the near side standing in a transverse line with the animal's hip. The colt being down, the uppermost limb is now drawn to the loop on the shoulder and fixed; the other rope will be found underneath the animal, on a line with the back part of withers, and it must be drawn tight, carried over the back, and hitched on the fetlock of the off hind limb. The animal is now fixed, for all practical purposes; the fore limbs are free, and the rope of the near hind limb is secured to the off hind fetlock, which obviates the necessity of turning the animal over to adjust the ropes on the near side. An assistant holds the rope ends, and pulls the animal partly on to his back, which facilitates the operation.

I prefer casting with the hobbles, as fewer hands are required to throw the animal, and when it is once down there is no fear of it wriggling itself free. In many farmsteads, there is a scarcity of men, and those that are there I often find of little assistance in casting an animal with ropes. The hobbles I use for colts are on a similar principle to the ordinary hobbles employed for casting horses, but much smaller and lighter, with the addition of small safety straps to retain them in position, in case the animal moves before they are properly fixed. The question might be asked, as to how hobbles are going to be fixed on an unbroken colt, probably one that has never been haltered before? The difficulty in doing so would certainly be great, if the necessary precautions were not taken.

The first thing to do is to get a good man at the head, and a twitch on the animal's nose; then a man must be directed to take hold of the tail, and pull it either sideways or backwards—this latter precaution I consider of great importance. The great subduing influence man has over animals by means of the tail is worthy of attention; and a form of twitch applied to that part which would not interfere with its structural arrangement, might prove serviceable in the subjection of vicious horses. In the great

majority of unbroken colts, these measures are sufficient to keep the animal quiet enough while the legs are being handled; but in exceptional cases, where the animal is unruly, it may be made to stand quiet by placing a long thick rope round the neck and twisting the ends until pressure is caused on the trachea. These methods I have always found sufficient to render the most vicious animals quiet. The hobbles being fixed, a short rope and chain is passed through the iron loops as quickly and quietly as possible, the man at the tail pulling the animal on to the near side. A rope with a loop is now placed on the animal's neck, and the rope end passed between the fore legs and around the fetlock of the uppermost hind limb, in a similar way to that adopted when casting with the rope; this rope can be placed on the animal either before or after it is thrown. The fetlock is released from the hobble and drawn up to the loop on the neck, and secured.

An assistant holds the rope end and keeps the limb in a flexed condition; he also pulls the colt partly on to its back, as I find the operation can be much more easily performed in that position than when the animal is laid flat on its side.

A little packing under the underneath limb will also assist in elevating the hind part of the animal, and keep it in a right position. After the operation the hobbles are freed, then the limb that is fitted to the neck-rope which is previously partly undone, is slipped off the loop, and the animal is allowed to rise.

As regards the operation, I adopt a different method with different animals. With large pigs, calves, and young bulls, I mostly operate on them in a standing position, and merely make an incision through the scrotum and cremaster muscle; then draw the spermatic cord. I find the older the animal is, the more time and care will be required in drawing the cord to prevent hæmorrhage—the tension must be prolonged. Old bulls I generally cast, and operate upon them with the torsion forceps.

I find the wooden clams answer very well for sheep. In castrating pigs in a standing position, care must be taken to make the incision well to the anterior part of the scrotum. In colts, I find the actual cautery more satisfactory than the other methods I have tried. A correspondent recently wanted information as to the efficacy of the ecraseur in castration. I am not favourably inclined to its use. I find it a slow and cruel instrument, and where time is of value, and the owners are a knowing class of men, I don't think the operator is likely to add to his reputation by using it. I have an idea that if four colts were cast ready for operation, an expert operator with the cautery could do three of them while the other was being operated upon with the ecraseur. The chain ecraseur is a good instrument to use for the

removal of soft tumours that cannot be reached with the actual cautery, but I consider the latter instrument more reliable and much less painful. Before commencing the operation of castration, there are some precautions to be observed which the beginner will do well to remember; the knives, clams, irons, and other necessary instruments, together with the box or case in which they are carried, must be kept thoroughly clean. I adopt the plan of carbolising the whole lot of them before starting on my rounds in a morning, and I use them solely for the purpose of castration. I never operate on an animal which appears to be in any way unhealthy or very thin, "hide-bound" or off its appetite; neither will I operate on one that is very much fatigued. All colts should be strong and handled some time before being operated upon; by this being done there is less risk both to the owner and operator. I have castrated colts when they were in an overheated condition, and several feet of the omentum has protruded through the scrotum, either at the time of operating or some hours afterwards; but on clipping it off as high up as possible, they have done well. It has never been my misfortune to have a case in which the bowels protruded after the operation, but I have known of several cases occurring where the animals have been very much fatigued previous to operating. During the seven years I have resided in this district, I have castrated about fifteen hundred animals, and I have never heard of a death from the operation. I mention this fact in support of my statement as to the advisability of taking the precautionary measures recommended.

DISLOCATION OF THE SHOULDER-JOINT OF A MULE—REDUCTION AND RECOVERY.

BY J. A. NUNN, F.R.C.V.S., F.R.G.S., ARMY VETERINARY DEPARTMENT, CHIN LUSHAI EXPEDITION, INDIA.

THE patient was a mule belonging to the Transport Department of the Chittagong Column, Chin Lushai Expedition. On the evening of February 3rd I was informed that he had fallen through a bamboo bridge, a short way from the station he belonged to, and was unable to proceed; but about an hour afterwards he was brought into the transport lines by four drivers. There was great deformity of the right shoulder-joint, with inability to extend the limb, the toe of which was dragged along the ground. The head of the humerus could be distinctly felt over-riding the scapula, in front of the spine of that bone, and above the coracoid process.

I cast the animal, and fastened a line round the fetlock of the injured limb, which was forcibly extended backwards; at the same time, I brought all the weight of my body to bear on the head of the humerus, which returned into its place with a loud click. The animal was assisted into slings, and a blister was applied around the joint. The mule returned to work on March 1st, having been on the sick list twenty-five days. I am not aware that very many cases of successful treatment of this accident are on record, and, in fact, at one time I was of opinion that dislocation of the shoulder-joint of equines could not take place without either fracture, or such injury to the capsular ligament as would render treatment hopeless. But if the case I have here recorded is any proof, it would appear as if such an occurrence could take place, and that it can be treated with hopes of success.

This mule was a miserable, weak animal, or I would never have been able to operate without chloroform, which is not procurable in these parts.

ON THE SPONTANEITY OF RABIES.

BY C. B. JONES, ONTARIO VETERINARY COLLEGE, TORONTO, CANADA.

THERE appeared in the March number of the VETERINARY JOURNAL, an opinion advanced by one of our foremost canine pathologists as to the advisability of muzzling to eradicate that dire malady, "Rabies." The paper in question was one read by J. Woodroffe Hill, before a body of eminent men, both in human and veterinary pathology, who, presumably, had assembled for the purpose of giving voice to the most advanced and strictly scientific researches regarding this dread disease, as well as endeavouring to propound to the profession and public in general, the manner of propagation and the most radical means to adopt, by which the malady may be stamped out.

After launching well out and rowing long and fearlessly in the peaceful ocean of *sympathy*, pleading in well-framed reasonings that the canines be spared the sufferings attendant upon muzzling, Prof. Hill at last ran adrift, or at least sailed in very shallow water, when he asserted that even though the muzzling order were strictly observed in every section, it would never lead to the extinction of the malady, for the reason "that the disease did, undoubtedly, in *his* mind, arise *spontaneously*"—an opinion that, at the present day, should scarcely be entertained by a student in pathology. And it is this point more particularly in his paper to which objection should be taken, from its being misleading in the

extreme and erroneous. The mere fact that a case of Rabies seems to sprout in a district, and for which no assignable cause can be traced, is not evidence conclusive that the said disease was of spontaneous origin; in fact, such isolated instances can have no influence with those who understand the laws of contagion. The heterogenetic theory had its origin in the imagination of Needham, and should have perished with him. It is a theory not countenanced, much less taught, by the leading pathologists of the day.

True, the learned gentleman can hold that it is possible for certain organisms to change their form—be *modified*—and for pathogenic organisms to become, under the force of attenuation, non-pathogenic; but further than that he cannot go, unless clinging still to the disproven experiments of Buchner.

Spontaneity should be discarded by every student of pathology, in face of the innumerable experiments that are conducted from day to day, each one of which shows unmistakable evidence *positive* of the weakness of such an hypothesis, to say naught of the strong circumstantial evidence against it.

Why is it that Rabies is not known in Australia? Because only produced by inoculation, and means having been taken by which such is absolutely impossible there.

Why does it never occur in New Zealand? And why is it not more common in the United States and Canada? Simply because the disease is spread by inoculation alone, and some means are taken to guard against that inoculation.

What more dire calamity could befall a community, and what could be more disastrous to the world at large, than Rabies *originating spontaneously?* As a well-known pathologist has said, "It is absolutely not *thinkable*."

And to another point I would like to draw the attention of Professor Hill: is it not an established fact that no animal with which we have to deal possesses a natural immunity against the disease—no animal, human or lower, is exempt? Now, in lieu of this fact, why does not the disease appear primarily in the human animal, or in the equine or bovine species? I am not aware of any such case recorded; and where the disease has manifested itself in these animals, it is usually readily traceable to inoculation direct from a carnivorous animal. And if developed within the animal, does it not seem more probable that the disease would appear in pampered and artificially kept animals than in the mongrel, the fox, or the wolf?

Needham is pardonable for his erroneous ideas from the fact that his manner of conducting experiments was very rude, and not to be compared with those of to-day. Surely, Prof. Hill

would not harbour the idea that micro-organisms are secondary to putrefying material; for we know that without them primarily we do not, under any circumstances, get putrefaction; and it is disastrous to his theory to know that it was from *this reasoning alone* that Needham based his conclusions—he holding that if organisms were generated *de novo* in putrefying material, then it was possible for a disease to produce the organism.

What fallacy! Micro-organisms are no more capable of originating of their own free will, or voluntarily, than is man; and the sooner veterinary pathologists discard such groundless theories, just so much sooner will this disease be understood and placed in its proper light before the world at large; whereby preventive measures may be suggested that will, when enforced, eradicate the disease, and thus redound to the honour of our profession.

Editorial.

A STAMP DUTY ON VETERINARY MEDICINES.

THE correspondence which has taken place in this Journal, with regard to the extensive sale of medical compounds by unqualified persons to agriculturists and others, draws attention to what may be considered an evil which demands investigation, and may probably require redress. Within a comparatively brief period, the sale of drugs by chemists and others, for the cure of diseases in animals, has attained immense proportions, and there is evidently no other limit to the business than the finding of customers. What the composition of these compounds may be it is difficult to guess, as all that is vouchsafed with respect to them is their applicability to certain injuries or disorders, or their suitability for maintaining health. That many of them are of little value, while others are positively hurtful, may be inferred; and the fact that, as a rule, the people to whom they are sold are ignorant of their nature and of the diseases for which they are pronounced to be specifics, makes it all the more necessary that they should be protected from loss and their animals from injury. That damage is often done by these drinks, powders, boluses, and liniments, there cannot be a doubt, as the public are not safeguarded in any way; and even when the articles are inert or harmless, the reliance upon their beneficial effects may lead to loss of valuable time. The majority of unenlightened folks are not averse to a little amateur doctoring, and in the remedies they employ they are very likely to be imposed upon. The public are fairly well protected from bad results, so far as they themselves are concerned, but their animals are not; and perhaps the time has now arrived when the indiscriminate sale of drugs for these should be brought under notice, with a view to limit or regulate their distribution. The public are protected from injury and fraud in many matters of this kind, and it is highly desirable that the protection should be extended so as to include advertised animal medicines. The imposition of a stamp duty, as has been suggested by one of our correspondents, would go a long way to affording a guarantee that the medicines are really what their vendors profess they are; and veterinary surgeons who are so often called in to attend upon animals which have been drugged with these articles, would then have some idea, perhaps, as to how they should act in attempting to remedy or neutralise their bad effects.

This is a question for the Council of the Royal College of Veterinary Surgeons to consider, and if possible to solve in a satisfactory manner, for the benefit of animals and their owners.

THE PYOCYANIC DISEASE.

In a paper read before the Société de Biologie of Paris in January last, Professor Cadeac, of the Lyons Veterinary School, has furnished an important contribution to the study of what is designated the Pyocyanic disease—a general malady, also known as Blue Suppuration in man, and in which Charrin has found a microbe on which he lays much stress, as enabling him to elucidate interesting points in the pathology of infectious diseases. The malady which, in a clinical point of view, is a form of Suppuration, and experimentally offers varied symptoms and lesions in the rabbit and guinea-pig, had not yet been observed to have its natural soil in animals.

Cadeac's investigations tend to demonstrate that the Pyocyanic disease may be present in animals, as an essential or special disorder, or may exist as a complication of other diseases. His observations were made on a dog which had been ill for a long time, and was recognised as affected with Lymphadenoma in the last stage. The glands of the throat and neck were very hypertrophied, and compressed the trachea; while the animal, distressed in its breathing, made a roaring kind of noise. It ejected everything it swallowed, could scarcely walk, and the cachexia was extreme; it was destroyed.

The autopsy revealed a considerable enlargement in size of all the lymphatic glands in the body, and the spleen was hypertrophied, mammillated, and full of lymphadenomes. The walls of the stomach and the intestines were very much thickened, chiefly towards the duodenum.

Microscopical examination of the lymph-gland pulp and of the spleen tumours in the fresh state, after staining with methyl violet, demonstrated the existence of very small bacteria; sections, after hardening and double staining, confirmed the diagnosis as to Lymphadenia, associated with microbic infection.

Sowing of the products of the lymph-glands and spleen tumours gave rise to cultures, which showed the same development, and assumed the same physiognomy as those of Blue Pus. The microbes, when inoculated into several rabbits, also comported themselves as those of Blue Pus, and, like them, occasioned more especially the paralytic phenomena which have been so well studied by M. Charrin.

All attempts to inoculate dogs in every way failed, It is noteworthy that the presence of Pyocyanine in the culture broths was distinctly ascertained: chloroform, acidulated water, ammonium, and all the other reagents of this product gave the characteristic reactions.

The microbe which Cadeac found in the spleen and lymph-glands of this lymphadenic dog, is therefore certainly that of Blue Suppuration; the animal had been spontaneously contaminated, but probably the microbe had nothing to do with the development of Lymphadenoma, and had only to adapt itself to the organic medium of the animal, which was enfeebled by this disease.

But it is not always thus; other diseases may facilitate its evolution in the organism or develop it by the simple intervention of a chromo-aromatic microbe, the cultivations of which correspond entirely to those of the Pyocyanic microbe.

In the *Revue Vétérinaire* for 1888 (p. 315), Professor Galtier reported the discovery of a chromo-aromatic microbe in a young pig. The animal showed "numerous lesions of Broncho-pneumonia, Pleuritis, Peritonitis, and Enteritis, but especially a very marked congestive and hæmorrhagic condition of the entire lymphatic system." All these alterations Galtier imputed to the microbe, so that if the parity of this microbe and that of Cadeac is confirmed, it will follow that the Pyocyanic microbe cultivated by Charrin, the Pathogenic chromo-aromatic microbe studied by Galtier in the lungs of the pig, and the microbe met with by Cadeac in the spleen and lymph-glands of the dog, are one and the same, and may very properly be designated the microbe of the Pyocyanic disease, and be more common than has been hitherto suspected.

EQUINE INFLUENZA.

At a recent meeting of the Imperial Royal Society of Physicians of Vienna, Professor Csokor, of the Veterinary Institute, made a communication on Influenza in horses. He said two morbid processes which were anatomically and clinically quite different from each other, were comprised under this term. The true Equine Influenza, the so-called *Pferdestaupe* (horse-distemper) was very infectious, and cases of transmission of this disease to dogs, and even to man, had been recorded. The infectious matter was still unknown, but it was probably in the excrements. It was volatile, and was transmitted by the air. The disease invariably set in with high fever (42° C.) and severe nervous disturbances; great depression and extraordinary muscular weakness were particularly noted. Occasionally intestinal symptoms, such as Colic and Diarrhœa were observed. The eyes were invariably affected by Phlegmonous Conjunctivitis, Parenchymatous Keratitis, and Exudative Iritis. All the symptoms disappeared in a few days, but the nervous depression persisted for several months. This depression (*Dummkoller*) was due to Chronic Hydrocephalus. Dr. Csokor had only twice had an opportunity of making *post-mortem* examinations of horses which had died of the uncomplicated disease. Multiple Parenchymatous Myocarditis, Parenchymatous degeneration of the liver and the kidneys, and particularly of the skeletal muscles, were observed. The second form of Equine Influenza was the so-called *Brustseuche*, which was quite different from the *Staupe*. Its essential character was that of a contagious Pneumonia. It had been known in Austria for about seventeen years, and had considerably increased during the last seven years. In the Vienna Veterinary Institute 30 cases were noted in 200 necropsies of horses from 1883 to 1887; 39 among 229 in 1888; and in 1889, 46 cases. According to Schütz, of Berlin, the infective agent was a Capsulated Coccus, which, however, entirely differed from the Pneumococcus of man. The inoculations with this Pneumobacterium proved extraordinarily virulent, as all the horses and other animals inoculated died of Gangrenous Pneumonia. Hæmorrhagic pleurisy was a constant symptom. In some cases Myocarditis came on, and death speedily ensued. The disease ran its course from eight to ten days, the mortality being from ten to twenty per cent. Preventive inoculations, performed a year ago at Berlin with cultures of the Coccus, were partially successful.

REPORT ON THE COMPETITION FOR THE HORSE-SHOEING PRIZES AT EXETER, WITH OBSERVATIONS ON THE GENERAL TREATMENT OF DISEASES OF THE HORSE'S FOOT.*

BY T. D. BROAD, F.R.C.V.S., BATH.

After remarking on the results of the last shoeing competition, and the manner in which such tests should be carried out, Mr. Broad says:

This Society has, during the last twenty-five years, done very much towards bringing about improvements in shoeing; previous to that time it was badly done in many towns, and in nearly all country places. The plan of shoeing at the Society's annual meeting is that of the ordinary seated or concave foot-surface shoe, that being the only shoe applicable to any kind of foot. For the prevention of slipping, there are a variety of patterns of rolled bar-iron suitable for making shoes; some having rims, and others being deeply notched on the ground-surface of the shoe, also concave for the ground-surface for hacks and hunters' fore-shoes; but, to any other make, I prefer half-round

* From the Journal of the Bath and West of England Agricultural Society.

bars, which are suitable for hind or fore-shoes, will do for fullering or stamping, and are less likely to be cast when used on hunters or hacks ridden on soft ground, and greatly tend to prevent clacking. The sizes most commonly used are three-quarters and seven-eights by three-eights and half-inch high-backed iron; the different sections of iron enabling the general smith to make better shoes than he otherwise could do. One of the most effectual plans of shoeing to prevent slipping on asphalt, Scotch granite, greasy roads, or wood pavement, is that known as the Charlier plan, which admits of the frog and sole coming in contact with the ground more so than in a natural or unshod state. The short Charlier plan is largely advertised by Mr. South, veterinary surgeon, of Bond Street, London, as the rational principle, or improved Charlier (registered). The same shoe has been previously adopted by Westley Richards, and named the Westley Richard's Shoe, notwithstanding that it had been previously used in France. The Manchester and Liverpool veterinary surgeons have a much larger experience of the Charlier plan of shoeing than any other veterinary surgeons in the United Kingdom, and as the horses in those towns work hard, the plan is much better tested by them than by private persons who ride or drive their horses quietly for an hour or two during the day; and those veterinary surgeons state that, with short Charlier shoes, the heels of the feet often become bruised and inflamed, the quarters also break away, producing corns and quittors. The Manchester Carriage Company have 4,000 horses; of these, 3,000 are shod on the Charlier plan, but the feet of the other 1,000 will not admit of it, as many horses whose feet are strong will not allow of the shoes being let in for the first few times of shoeing without the horse going more or less lame or tenderly, and the plan is not applicable to those with thin, weak soles and walls. The shoes of the Manchester Carriage Company are made of steel, and wear from ten days to a fortnight on an average. Previous to the adoption of the Charlier plan the company often had horses fall and fracture their pelvis; but such cases now very rarely occur. The chief advantage of the plan is the prevention of slipping.

It has been very generally stated by writers on shoeing that but for the cutting away of the frogs with the knife all horses would have good frogs, which would act as buffers; but such is not the case, as all horses will not have good frogs under the Charlier or any other plan, or even if used without shoeing; in fact, many horses have not good frogs when in a state of nature unshod. A great drawback to the Charlier plan is that horses to which it has been applied lose their action; however good it may have been before, they do not afterwards lift their feet much off the ground, and many of them go "stale and pottery," showing the effects of work about the fetlocks sooner than when shod in the ordinary way. The same rule, with few exceptions, applies to horses which are worked without shoes. Most authors advocate very light shoes; but putting out of question the Charlier plan, the writer prefers stout ones for hard-working horses on pitched streets or hard roads, as they lessen the jar or concussion, and bad feet require them more than good ones. It may be taken as a rule that, in proportion to the lessening of the weight of a horse's shoes so will he lessen his action, thus affording proof that, with very light shoes, he finds that his feet are more jarred than when shod more stoutly, consequently he does not lift them off the ground so high; this, however, does not apply to horses which are ridden mostly off the road. The writer has long found that hack and carriage horses with weak, flat feet, and large frogs, do not go well when shod with ordinary shoes if the frogs get too much pressure from being above the level of the surface of the shoe. This is especially the case when they are shod with leather soles or india-rubber frog pads on leather. Even with good, sound, concave feet, when the frogs are above the level of the surface of the

shoe, the horse will often knuckle and nearly, or quite fall down; frogs will not bear much constant pressure or buffering from hard roads, leather, or any other substance, without interfering more or less with the horse's action, and often causing lameness. But big, heavy cart-horses, with weak, flat feet and thin heels, used at a walking pace, generally go much better when their big frogs take a considerable amount of bearing on the ground through their entire length, relieving the weak heels and enabling them to get up stronger.

For fairly testing any plan of shoeing it must be by horses which do a fair day's work, not by those which do about an hour's quiet work in the course of the day. Leather soles are very beneficial in lessening concussion, and the prevention of injury to the soles and frogs from picking up nails and other things. The pitched streets and hard dry roads, as well as hereditary predisposition, have a good deal to do in the production of diseases of the feet. I often hear coachmen and others say that their horses do not go so well when the roads are dry as when they are moist or wet. Young horses, and others which have been out of work for some time, are very apt to interfere or cut when carefully shod in the ordinary way, the common remedy for which is a very thick inside half of the hind-shoe. This sometimes succeds; but in case it does not, it is very likely to lame the horse from the heavy blow from the thick piece of iron, and if its use be continued, it will be likely to produce an enlarged joint. I much prefer a shoe which is made gradually thinner from the inside toe until it is as thin as possible at the heel, and instead of a calking on the outside, let the heel of the shoe be thinner than usual, the inside half of the foot being kept as high as possible, and the fore-foot shod on somewhat the same principle, the outside half of the toe of the foot being kept rather lower than the inside half, and the blank inside half of the shoe being more bevelled than is commonly done; if a horse treads more on one side of the foot than the other, lower that side of the foot. For speedy cut use very light shoes, to lower the horse's action, the shoes to be bevelled on the inside; and if that does not succeed, then three-quarter shoes to be put on. When using Rodway, or notched iron, it requires extra care in getting the heads of the nails well hammered down, otherwise the clenches will quickly rise. The number and position of the nails are now known to be of much less consequence than they were formerly supposed to be. Injury to the feet is more likely to occur from using too few nails than from using one more than is supposed to be necessary to keep the shoe on; as when so few nails are used, and one happens to break off under the head —which is not an uncommon occurrence, especially where five nails only are used—the probability is that the shoe will become loose, and possibly cast before the rider has finished his ride, and the foot possibly broken, so that it may require several weeks' growth before it has recovered its natural appearance, whereas an extra nail does no harm if properly driven. Professor Brown, in an article "On the Horse's Foot and the Principles of Shoeing," which first appeared in the "Journal of the Royal Agricultural Society," and has since been brought out in pamphlet form under the auspices of the Society, has done an injustice to English farriers and veterinary surgeons who have shoeing forges, and since its publication the writer has often been told by clients that his farriers drive the nails too high, thus giving the writer the trouble of explaining and proving by means of a dead foot, the fallacy of the opinion expressed. Professor Brown states:—

"It is not flattering to the workmen of the nineteenth century to be told that the 'children of the desert' did better things in the way of making and fixing shoes to horses' feet than are done now, but there are good reasons for the statement. The Arab shoe was light, and protected the bottom of the foot from injury; the nails had very large heads, and were so driven that only the lower part of the crust was pierced, and the heads of the nails gave a better

foothold than is obtained by the modern system of shoeing, as it is evident that this thin, flat plate of iron can be fastened to the foot in such a way that the whole of the bottom of the organ, the crust, the sole, and the frog, shall be equally pressed. Plainly stated, the Arab shoe allowed the whole of the base of the foot, wall, sole, and frog, to rest on a hard surface."

The Arab shoe is possibly suitable for the desert, but to compare it with the English system of shoeing is out of the question, as on our streets a horse could not keep on his feet after the heads of the nails were broken or worn off, which they very quickly will be, since, not receiving the least protection from the thin plate of iron, off would fly the shoe; the time it would remain on being only a question of hours. If Professor Brown had taken into consideration the natural conformation of the Arab's feet, which are of a donkey shape, with very deep *concave* soles, he would have known that a flat piece of iron could not allow the whole of the base of the foot, wall, sole, and frog, to rest on its hard surface. As to the contention that the nails ought to be driven in a more oblique direction, and not so high up as is now done, the plan could only be carried out on horses with good strong feet and a large amount of crust; as with a very great proportion of ordinary working horses, and those with flat or thin, weak feet, it would be impossible.

Professor South has lately been trying to prove that the foot expands every time that it comes in contact with the ground, but he has not brought forward anything new in proof of his theory. The writer has not believed in the expansion theory since hearing Mr. Charles's paper read at the Veterinary Medical Association in 1837. And the experiments on the expansion of the horse's foot by Mr. J. W. Gloag, as reported in the *Veterinarian* of 1849, still further confirmed him in that view. The writer's view of the physiological action of the foot is that, on the bottom of the foot coming in contact with the ground, the wall at the coronet slightly expands—as shown by the opening of a toe sandcrack, such as is often seen in the hind-feet of heavy cart-horses—the crack closes when the foot is off the ground, as is well known to all persons who treat sand-cracks by bringing the edges of the crack together and riveting them with one or two horse-nails, instead of adopting the bad old practice of "bottom the crack" to allow pus, dirt, etc., to escape. In every veterinary work with which I am acquainted a sandcrack is described as closing when the foot comes in contact with the ground, and in one work in particular I am credited with being the first to make it known. Not long since I was on a short visit to a highly respectable member of the profession, who has been on the Council of the Royal Veterinary College, and also an examiner for many years past. During his morning's rounds I saw a case of toe sandcrack in the hind-foot of a heavy cart-horse which had undergone the process of "bottom the crack"; on enquiring how long it had been under treatment I was told a month, and I ventured to state that it would be at least another month before the horse would be fit to work. I told my friend that it was the result of "bottom the crack" treatment. For about seven years I had to perform that operation when acting as an assistant to different London veterinary surgeons, and it was not an uncommon occurrence to attend a case nearly every day for a month or more, and when I commenced practice on my own account I followed for ten years or more the same plan of treatment, with much the same result; but for the last thirty-five years I have not allowed a toe or quarter sandcrack to be touched with a knife, not even when blood was oozing from the crack; when there is a crack near the heel I have cut away the wall at the heel to prevent contact with the shoe: consequently I have not had a single case which has given me trouble during that time, either from pus, granulations, or dirt, which is only the result of "bottom the crack" treatment. The different authors commit as great an error in recommending such treat-

ment as they do in stating that a sandcrack closes on the foot coming in contact with the ground. In the treatment of quarter sandcracks, or when the feet are not strong enough to bear a nail being driven into it, Mr. South's plan of treatment is the best, only it requires some little practical mechanical knowledge to do it properly. Binding the foot up in such cases, either with waxed tape, tar twine, or wire does no good, and disfigures the shape of the foot. If Mr. South's plan of treating quarter sandcrack be not adopted, put the horse in a loose box, without shoes, lower the crust opposite the crack, and apply daily to the foot and coronet hoof ointment. In a paper read at the Central Veterinary Medical Society by Mr. A. Rogerson, it is there stated that "it is unmistakeably necessary that a sandcrack should be thoroughly cut out, and subsequently a nail inserted transversely to the crack." Unless Mr. Rogerson intends waiting about six months for the "thoroughly cut-away wall" to grow down, I cannot see how it would be possible to drive a nail so as to bring the sides of the crack together. There is also another plan of treating sandcrack which I have known adopted, that is, in cutting away a considerable portion of the wall in connection with the crack, which involves the necessity of laying up the horse for three or four months or more. The same treatment has been recently recommended for laminitis, but I am of opinion that very few persons who, knowing the danger of injuring the laminæ during, or subsequent to the operation, and its consequences, will be induced to adopt that plan of treatment. (For the treatment of sandcrack see the writer's article in the *Veterinarian* for 1875, page 99).

All the experiments hitherto adopted for proving that expansion takes place at the bottom of the foot when it comes in contact with the ground have been by measurement and noticing the polished ends of the fore-shoes which come in contact with the heels of the foot; this, however, is produced quite independently of any expansion, and depends more on the length of time that the shoes have remained on without coming off, and on the tightness with which the shoe has been nailed to the foot. I have known the shoes of a farm-horse to remain on twenty-two weeks without either one of them coming off, in which case the polish extended round the toe of the shoe as well as the heels. The action of a toe sandcrack shows that a slight expansion takes place in the upper part of the foot when it comes in contact with the ground, and it also proves, from the shape of the foot, that no such action can at the same time take place at the lower circumference of the foot, but rather that it is slightly constringed.

Thick, strong soles will generally bear the pressure of a non-seated shoe, but horses having flat feet do not, as a rule, go well in them. If the soles are thin and weak a non-seated shoe is unsuitable, for it often occurs that when a concave ground-surface shoe is fitted to such a foot, so as to appear to have no bearing on the sole, it is found that the horse does not go well until the shoe has been made to clear the sole more. This tends to prove that there is a slight downward yielding of the sole in such thin feet, which can only take place through the medium of the elastic tissue connecting the sensitive laminæ with the pedal bone, as in all other respects the pedal bone is so securely connected with the wall that all up-and-down motion appears impossible. Before preparing the foot for a shoe the smith ought to take a front and side view of the foot on the ground to see whether the toe or heels require the most rasping to bring the foot to its proper angle and shape, as some feet grow more at the toe, while others grow more at the heels, and others again grow more on the inside half than on the outside, in which case fit the shoe close on the inside and full on the outside. When feet are much overgrown it is necessary to use the knife; but when shod regularly it will seldom be necessary to do more than remove what flakes of sole are loose, and to cut away the inside bar sufficiently to prevent its taking any bearing

on the shoe at the seat of corn, otherwise it will in all probability soon produce one. There are many feet that do not require the least cutting or reducing when about to be re-shod.

Hot or Cold Fitting of Shoes.—All practical men who have given an opinion on the subject are unanimous in recommending hot-fitting in preference to cold, the latter being only justifiable when it is impossible to adopt the former. Dr. Fleming, in his work, "Horse-shoes and Horse-shoeing," has gone thoroughly into the subject and advises hot-fitting; but before applying a hot shoe to the foot, the fitter ought to see that the shoe and the foot are both level, otherwise the foot will receive unnecessary charring. I began to practise on horses' feet in 1830, and my experience teaches me that in a forge where good workmen are employed, it is very rare for a horse to be seriously injured from a nail having been driven into or too near the sensitive part of the foot; that is, if the foot be properly cut out and attended to as soon as the horse is seen to be lame.

For the prevention and treatment of capped elbows, fit the shoes close and short at the heels, the same as for hunting, and round the edges of the shoe for the space of about two inches from the points of the heels. I have known elbows to become capped when the horses have been at grass, or in a loose box for months without any shoes on, but such cases are not common. Of late years the ordinary remedy has been to buckle round the coronet a round leather collar stuffed to about the size of a man's arm; this I have used for years, but did not find it to be always effectual, and if its use be long continued the leather becomes hard and chafes the heel, and servants often omit to put it on. For the last few years I have used an ordinary thick woollen rug buckled at the breast, where the rug must be made sufficiently deep to come down to about two-thirds of the arm from the elbow to the knee, so as to completely wrap round the elbow when the roller is on, the extra depth of rug to be gradually lessened so as to terminate near the knee. Since using the rug I have not used or recommended the use of the leather collar, as the former is much more effectual in assisting the treatment, or in the prevention of the tumour. If the tumour be of recent formation, I use hot or cold water, or lotion; if necessary, afterwards, very strong tincture of iodine about once a week, unless it has advanced sufficiently to require the scalpel; in that case sew on to the rug a good-sized piece of oiled silk, or thin mackintosh opposite the wound to prevent the pus getting on the rug, and apply to the wound a small quantity of *ung. arsenicum* (one in eight) every three or four days, to destroy any thickening or new granulations.

During the last few months a nail-less shoe has been largely advertised by the Adjustable Horse-shoe Syndicate, and as I understand that the syndicate is very liberal, I presume that it has not had much difficulty in obtaining favourable reports from veterinary surgeons and others, who state that the shoe can be put on by an ordinary person in three minutes, whereas it takes a farrier fifteen minutes to put on an ordinary shoe. But neither of the veterinary surgeons has informed the public that the nail-less shoe requires to be nicely fitted before it can be adjusted to the foot, and that to make it and fit it, with all its appliances, would take at least six times as long as a farrier would require to make an ordinary shoe and fit six ordinary ones; while there are a large number of flat, thin, weak feet which would not admit of the studs being let in sufficiently to be of service in keeping the shoe in place, and I do not see in what way it can act better than an ordinary shoe in preventing cutting or sandcracks, and no practical person could fairly state it to be a shoe suitable for the army. In 1839, M. de Gournay brought from France a number of nail-less shoes made as nearly as possible like the present nail-less shoe, having ears, studs, band, and the kind of crotchet at the front of the foot. They were at the time extensively advertised, favour-

able reports were given by veterinary surgeons and others, as in the present case, and trial was given to them by gentlemen of position and owners of carriage, saddle, draught, and common cab horses; but from various objections their use was soon discontinued. I have one of the shoes that I brought from London at the time; it has been hanging in my office with a number of other specimens made to admit of the ghost of expansion theory.

Horses with flat, thin fore-feet go better when shod with wide-webbed seated shoes than in those of any other make.

In the case of shoes for corns, cut off about two inches of the inside heel of the shoe, leaving the corn uncut, unless it be suspected that pus has formed.

In shoes for the prevention of clacking, the fore ones should be made of half-round iron, the heels should be so bevelled as not to project over the heels of the feet, the top edge of the toes of the hind shoes should be bevelled so that there be no great substance of iron to strike the fore-shoes, and the two toe-clips must be kept more back than in ordinary shoeing.

Calkins and toe-pieces enable heavy-draught horses to have a much firmer foothold, and thereby greatly increase their power of draught for town-work, where the pitching stones are not laid closely together on the surface, otherwise they are not of much use. Calkins for hunters, hacks, and light harness work are not necessary.

High-heeled, or patten shoes, are only suitable in cases of recent sprain of the tendons, for if their use be long continued contraction of the tendons will be likely to result.

Thick-heeled fore-shoes are rarely necessary; but it sometimes occurs that horses whose feet are very flat, thin, and weak, and the frogs very large, go better with them, as they prevent the frogs from receiving so much buffering from the hard roads, otherwise horses, as a rule, which wear the heels of their shoes more than other parts go better when the new shoes are made after the shape of the worn old ones, as it tends to show that the lamina is more or less tender. Horses having seedy toes alway goes more or less on their heels, and require shoeing on that plan, whether by plain or bar shoes.

For the prevention of horses capping their hocks, or rubbing the sides of their hocks raw, on the floor of the box or stall, which is not an uncommon occurrence, cover the floor of the box or stall with a thick bed of sawdust, peat-moss litter, or turnings from a carpenter's lathe from deal or other boards (not ordinary deal shavings), over which put the ordinary straw bed. The Bath Tramway Company have used only carpenter's turnings as a litter for their horses for some years past, the cost being about threepence per sack, thus making a very cheap bedding.

India-rubber pads on leather enable many horses, whose feet are not sound, to work free from lameless; they also tend to prevent slipping. This is especially the case with Urquhart's "bar pads," respecting which my veterinary friends at Manchester, where they are largely used, inform me that they prevent slipping quite as much, if not more, than the Charlier plan of shoeing does. They are used on fore and hind feet by those persons who do not object to the extra expense, but, like the Charlier, they are not suitable in all cases; horses with flat, thin heels, and weak feet do not as a rule go well in them.

Shoes for Navicular Diseased Feet.—I have occasionally found that horses which could not work free from lameness in plain shoes, or with leathers, have been able to work with comparative soundness after being shod on the Charlier plan. I have also known harness-horses affected with the disease to work free from lameness for months; then, without any apparent cause, become lame, and so remain for several weeks, and then again recover and go as well as before, without rest, treatment, or any alteration in the plan of

shoeing. At the present time I know of a horse, one of a pair belonging to a client of mine—an elderly gentleman who works his horses lightly and regularly—and that horse has been off and on lame for more than seven years in one or other of the fore-feet. On dissecting the navicular bones in such cases, I have found that they were more or less affected with Caries, or that the cancellated structure of the bone had become more or less porcelaneous, causing occasional pain or aching, and consequent lameness. In such cases the articular surface of the bone is not diseased, otherwise the lameness would be permanent; but the character of the disease is somewhat analogous to that of a diseased tooth in a human subject, and this in my opinion accounts for the variableness of the lameness, which has hitherto been referred to Rheumatism. In performing the operation of neurotomy, high or low, I have long since discontinued the latter in consequence of the uncertainty of its effects; and as horses requiring the operation are not as a rule very valuable, their owners do not like the trouble and expense of a second operation. (*To be continued.*)

INOCULATION FOR CONTAGIOUS PLEURO-PNEUMONIA.

MR. GORDON, Chief Inspector of Stock for Queensland, writes to the *Live Stock Journal* for March 28th:—Your correspondent of your issue of December 27th, offers some advice to Australians as to the means of stamping out Pleuro-pneumonia which is well calculated to provoke laughter from stock-owners all over the Australian continent. Probably, if Australian cattle were kept under the same conditions as those in England, many of our stock-owners would favour the poleaxe, as the most expedient mode of dealing with the disease; but your correspondent can have very little conception as to the mode of pasturage in Australia when he in all seriousness suggests slaughter as a means of stamping out the disease! Such a course would entail the slaughter of ten millions of cattle, and then the disease would not be banished, as there are many thousands of cattle running in scrubs and inaccessable mountainous country quite beyond control.

The cattle in Australia form one huge herd, roaming over nearly the whole of the vast island. Complete segregation here, as in England, is an utter impossibility. We are content with inoculation as a prophylactic, and so highly is it esteemed by practical men, after twenty-eight years' experience of its practice, that inoculated store cattle are worth over fifteen per cent. more than uninoculated ones. Our difficulty is in procuring virus when required for inoculation. It was to aid us in that that we called in the services of MM. Germont and Loir, M. Pasteur's representatives. If a means of preserving virus were discovered, so that all young cattle might be inoculated, our long experience of the practice leads us to the belief that we should ultimately stamp out the disease.

It seems incredulous (to us) that the evidence of all the cattle owners in Australia—shrewd, practical business men that they are—should be so completely ignored on this subject in England and America, the more so that we have it in evidence that the disease was stamped out in New Zealand by means of inoculation.

THE BELGIAN VETERINARY SCHOOL.

BY a royal decree of February 27th, M. Degive, Professor at the State Veterinary School, Brussels, has been appointed Director of that establishment in succession to Professor Wehenkel, whose untimely death we recently recorded. No better successor could have been found than Professor

Degive, whose merits are well known and recognised all over Europe, and the Brussels School is particularly fortunate in having such an accomplished veterinarian for its Director.

FELLOWSHIP DEGREE.

An Examination for this degree took place on the 24th April, when four members passed, viz., Messrs. S. Villar, J. Moore, J. A. Thompson, and A. Rogerson.

The Examiners were Dr. Fleming and Professors Brown and Duguid.

HONORARY DISTINCTIONS.

At the meeting of the Reale Societé Nazionale di Medicina Veterinaria et Academia Veterinaria of Italy, in February, Dr. Fleming, who was already a corresponding member, was appointed Honorary President. At the same meeting Mr. Burke, Army Veterinary Department, was elected a corresponding member. These elections were unanimous. Our best thanks are due to our Italian colleagues for their generous recognition of the veterinary profession in England.

Reviews.

The Journal of the Royal Agricultural Society of England Vol. I., Part 1. Third Series. (London: J. Murray. 1890.)

The Publication Committee of the Royal Agricultural Society was well advised in pressing for the appearance of this valuable journal every quarter, instead of, as in the past, half-yearly. The shorter period will give greater vitality to the work, and allow the opportunity for more varied contents. This is already demonstrated in the new number, which contains several articles of special interest to agriculturists, while others appeal to a wider circle. Among those which may be read with profit by veterinary surgeons is the illustrated special article by Professor Flower, on the Evolution of the Horse; the Foundation of the Royal Agricultural Society, by its present Secretary; and a smaller contribution by Professor Brown, on Influenza in Horses. Altogether, the new series begins well, and thoroughly represents the desire of the Society to maintain its utility by promoting agriculture, practically and scientifically, in every one of its branches. It is gratifying to learn that the society was never in a more flourishing condition than at present, nor never more earnest in its work; and its deep interest in the improvement of veterinary medicine, by the institution of a Chair of Pathology and Bacteriology at the Royal Veterinary College, is only one of the many directions in which it is accomplishing its grand mission.

Le Leggi dell' Ereditarieta. By Dr. Federico Boschetti. (Turin: Editrice Festa e Tarizzo. 1890.)

Dr. Boschetti, assistant professor of general pathology and pathological anatomy in the Royal Veterinary School, Turin, and who is well known as a most accomplished man of letters and science, has written a very engrossing book of one hundred and sixty pages on the laws of heredity, in which he ably discusses the views of Darwin and Sette-

gast as transformists or evolutionists, and those of Linnæus and Sanson as non-evolutionists. The laws of heredity are studied in a theoretical and practical manner, and the arguments and facts brought forward are well worthy of careful examination. But perhaps the most interesting section of the book is that in which the doctor offers a new physio-embryological hypothesis, with regard to the paternal and maternal determination of the sex, temperament, and individual constitution in mankind and animals. In this hypothesis cerebral localisation is made to play the chief part, in influencing the ovulo-spermatic transformation in the generation of animals. We regret that space prohibits a lengthened notice of Boschetti's dissertation on this subject, and a brief summary would not be treating it fairly.

FOURTH AND FIFTH ANNUAL REPORTS OF THE BUREAU OF ANIMAL INDUSTRY FOR THE YEARS 1887 AND 1888. (Washington : Government Printing Office. 1889.)

The volume containing these reports is issued by the United States Department of Agriculture, under the immediate auspices of what is called the Bureau of Animal Industry. The reports contain an account of the operations for the suppression of the Contagious Pleuro-pneumonia of cattle, of the investigations into various diseases of the domestic animals in different parts of the United States, and information bearing upon the present condition of the animal industry of that great country.

Dr. Salmon, who edits the work, and who, in addition to being the chief veterinary authority, is also director of the Bureau, informs us in his letter of transmissal that the period included in these reports embraces all of the work for the eradication of the Lung Plague which has been done since authority was given for applying such measures as are essential for the success of the task. Thus, during the first six months of the outbreak at Chicago, Illinois, there was no authority to purchase and slaughter exposed animals, and an insufficient sum was available for the destruction of those actually diseased. The Appropriation Act for the year 1887-88 gave additional authority, however, and from the time it went into effect the work has gone on successfully. Before the close of the year this dangerous disease had been eradicated from Illinois, and as soon as this was accomplished the affected districts in the eastern section of the United States were placed in quarantine, and a rigid supervision of the cattle traffic was established. Although, Dr. Salmon remarks, as compared with the results of similar work in other countries, the time has been short to demonstrate the effects of the system adopted, the progress has nevertheless been such as to give the greatest encouragement. The Western States, and all of the interior districts of the Eastern States, have been freed from the contagion. The disease no longer exists in Virginia or Pennsylvania. In Maryland it is confined to Baltimore; in New Jersey it is limited to Hudson County; in New York it is confined to New York City, and to Brooklyn and its suburbs. In all of these places infected herds are slaughtered as soon as discovered, and the places where they have been are

thoroughly disinfected. No other States are infected. It is added that the enforcement of proper regulations to prevent the dissemination of the contagion, together with these energetic measures for its suppression, have rapidly narrowed the infected areas, and have greatly lessened the prevalence of the disease in the centres in which it has longest existed. There is no longer any doubt that, with a continued application of these measures, the disease will soon disappear entirely from this country.

For the eleven months accounted for in the Report for 1888, the number of animals inspected was no less than 305,280, or more than 1,000 per day; this inspection included a careful examination of the lungs of each animal. The number of *post-mortem* examinations in the same period was 43,176, or 150 per day.

The book contains very important reports from Dr. Salmon on Hog Cholera, which he has carefully studied for several years, and upon which disease he is a recognised authority; upon Glanders, with regard to diagnosis; on the meat supply of the United States; on the etiology of Infectious Pneumonia in swine, etc. There are other reports by various veterinarians on the Tapeworm Disease of sheep on the Western Plains; on Southern Cattle Fever; on Anthrax; on Black-leg; and on buffalo gnats. Many of these reports are accompanied by coloured plates and woodcuts, which greatly enhance their value. Altogether, the information thus made public reflects immense credit on the ability of the veterinary surgeons entrusted with the heavy responsibility of investigating the nature and recommending measures for the suppression of the scourges which destroy animals in America; while the volume is an evidence of the deep interest the American public takes in the matter.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD APRIL 2ND, 1890.

Professor AXE, President, in the chair.

Present: Professors Pritchard, Walley, Dr. G. Fleming, and Messrs. Thos. Briggs, J. Roalfe Cox, Thos. Greaves, Wm. Hunting, H. Kidd, J. D. Lambert, W. G. Mulvey, Jas. F. Simpson, Peter Taylor, W. Whittle, Wm. Wilson, Wm. Woods, F. W. Wragg, Geo. Thatcher (Solicitor), and A. W. Hill (Secretary).

The SECRETARY read the notice convening the meeting.

Absentees.

The SECRETARY said that he had received letters from Messrs. McCall, Perrins, and Campbell, regretting their inability to attend the meeting.

Nominations for Council.

The SECRETARY stated that up to the present date he had received the following nominations: General Sir Frederick Fitzwygram, Sir Henry Simpson, Mr. Walters, Mr. Perrins, Mr. W. Hunting, Mr. Banham, Mr. R. C. Trigger, Mr. J. D. Barford, and Mr. J. Penberthy.

Parchment Diplomas.

The SECRETARY read a letter from Captain J. H. Farrell, student of the Royal Veterinary College, forwarding a petition from about 500 students of the various colleges, praying the Royal College that the diplomas granted them should be on parchment instead of ordinary paper.

On the motion of Mr. WHITTLE, seconded by Professor WALLEY, the letter was referred to the Finance Committee for report at the next Council meeting.

Matriculation Examination.

The SECRETARY read a letter from Mr. F. T. Stanley, M.R.C.V.S., directing attention to the proposed change as to the Matriculation Examination on entering a college, and stating that after January 7th, 1891, 50 per cent. of marks would be required in every subject, and that only first or second-class certificates of the College of Preceptors would be received. The writer considered that the proposed changes without longer notice bore hardly on the parents of intending students.

Professor WALLEY said he had received similar letters from parents. The third-class certificate of the College of Preceptors had been hitherto received, and no alteration should be made without due notice.

The PRESIDENT said that notice had been given to the several colleges, and had been acted upon.

Mr. WILSON said that the resolution in connection with the third-class certificate had become a Bye-law of the College.

Professor WALLEY said he would bring forward a motion on the subject at the next meeting.

The Farriers' Scheme.

The SECRETARY stated that letters had been received from the Royal Agricultural Society and the Farriers' Company acknowledging the communications made to them, and approving of the proposed alterations. He also announced the presentation by Professor Walley of a book entitled "Practical Guide to Meat Inspection."

A vote of thanks was passed to Professor Walley for his presentation.

Minutes.

The minutes of the previous meeting were taken as read, and agreed to.

The SECRETARY read the draft report to be presented at the annual meeting in May.

On the motion of Mr. WILSON, seconded by Mr. WHITTLE, the draft report was received.

Mr. J. F. SIMPSON proposed that the report be printed and circulated in the usual way.

Mr. WRAGG seconded the motion, which was agreed to.

Mr. WHITTLE proposed a cordial vote of thanks to Mr. Greaves for his gift of a double window for the Council Chamber, by which, he said, the acoustic properties of the room had been much improved.

Professor WALLEY seconded the motion, which was carried by acclamation.

Finance Committee.

The SECRETARY read the report of the Finance Committee recommending the discharge of present liabilities amounting to £234 8s. 11d. The Committee stated that they had before them a claim from Dr. Hamilton for his travelling expenses, payment of which they recommended.

Mr. WRAGG moved, and Mr. PETER TAYLOR seconded, the adoption of the report, and the payment of the liabilities.

In reply to Professor WALLEY,

The PRESIDENT said he was sorry that Professor Walley's motion with regard to giving encouragement to the further education of students had not been brought before the Finance Committee, but it should be at the next meeting.

The resolution was agreed to.

Museum Committee.

The SECRETARY stated that the Sub-committee had met and reported that they had, as far as the means at their disposal would allow, renovated and furnished the museum; and they also suggested that a sum of £100 should be granted towards further improvements, and the collection and preparation of anatomical and pathological specimens.

On the motion of Mr. WRAGG, seconded by Mr. WHITTLE, the report was agreed to, and a grant of £100 was ordered.

Registration Committee.

The SECRETARY read the report.

Mr. PETER TAYLOR moved the adoption of the report.

Mr. WOODS seconded the motion, which was agreed to.

Sir HENRY SIMPSON said, with reference to the annual report, he would suggest the addition of the following paragraphs:—"Veterinary Examination. In consequence of the report presented to the Royal Commission on Horse Breeding by this Council, the following diseases have been scheduled as those which shall disqualify horses competing for the premiums offered by the Royal Commissioners: roaring, whistling, ringbone, unsound feet, navicular disease, spavin, cataract." "Farriers' Company. The Farriers' Company, having decided to institute examinations for improving the art of horse-shoeing, have invited the co-operation of the Royal Agricultural Society and the Royal College of Veterinary Surgeons. The Council, after conference with the Farriers' Company and the Royal Agricultural Society, have approved the scheme of the Farriers' Company, due care having been taken that the rights and privileges of members of the veterinary profession are not in any way interfered with."

Mr. W. HUNTING proposed, as a further addition to the annual report:—"The Council had before it a proposal for a new charter, but on full discussion of that there was no sufficient reason for incurring the trouble and expense which would have been entailed."

Mr. WHITTLE seconded Sir Henry Simpson's motion, which was agreed to.

Mr. KIDD seconded Mr. Hunting's motion, which was put and lost.

A Government Grant.

The SECRETARY read the report of the Committee appointed to consider the subject of a Government Grant in aid of Veterinary Education. The Committee recommended that, inasmuch as veterinary education was a matter that chiefly concerned the veterinary colleges, and as the Royal College was not an educational body, the application for a grant of money should be made by the schools to the Board of Agriculture, the Royal College supporting their application.

The PRESIDENT said that the Committee met before the last quarterly meeting, and had reported to the effect that the question should be taken up by the schools supported by the College. Owing to some little informality objection was taken to the report, which was allowed to go back to the Committee; he was sorry, however, that he did not insist upon the order of the proceeding, but he thought it might be more liberal to allow it to go back to the Committee. The Committee had again met, and reported in the terms which had been read.

Mr. HUNTING protested against the way in which the report had been brought forward.

Dr. FLEMING said he thought the President was quite correct in what he had done. A certain subject was brought before the Committee and it had been referred back; at the last meeting the President simply explained the reason for its being referred back.

Mr. PETER TAYLOR moved that the report be received and adopted.

Mr. KIDD seconded the motion.

Dr. FLEMING said he should like to say a few words in explanation. When the Committee met on the previous day only four members were present. The first resolution was his, and with only four on the Committee the matter was very difficult to decide. Two were for the original motion, and only himself for the resolution; therefore he did not think that that in any way expressed the opinion of the Committee. There were only four, and the President could not vote. He was entirely against any action being taken by the College which was likely to bring it into ridicule. The College was not an educational body. If the money was for education, it was for the schools to apply for it and for the Royal College to support the application.

Mr. HUNTING said there were two ways in which the money might be asked for: one by the schools asking for it and being supported by the Royal College; and the other by the College itself asking for it and using it for educational purposes. When the Council handed over Professor Walley's motion to the Committee, it was distinctly understood that the grant was solicited not only for educational purposes but in recognition of the position of the veterinary profession. To say that the College was not an educational body was a misuse of words. It certainly did not teach, but it examined; and by examining it forced people to be educated, so that it was in a higher sense an educational body. If the profession was to be recognised by Government, and a grant given for educational purposes, there was no body better fitted than the Council to apply the money. Besides, it was utterly impossible to recognise the profession through the schools; and to send the schools to ask for the money would be no recognition at all.

Mr. P. TAYLOR asked whether the Committee was going to apply for a grant.

The PRESIDENT said that the Committee simply recommended to the Council that they should apply. He thought they were all agreed that an application should be made, and it was simply a question of who should make it, the Royal College or the schools.

Mr. WILSON said the first question that would be asked would be how the money would be spent. Did the Royal College intend to institute scholarships, or how would it expend the money if it got it?

Professor WALLEY said his main object in bringing the matter forward was that the schools deserved Government assistance, and also really needed it, being unable to carry out education in the way demanded by the Royal College. A Government grant would tend to raise the profession, as showing its recognition by the Government; and it would also assist in turning out properly educated men. In the meantime he thought all that was required was for the recommendation of the Committee to be received.

Mr. PETER TAYLOR said that, as there did not appear to be a unanimous feeling on the question, he should withdraw his motion.

The PRESIDENT said that, admitting that the schools found it difficult to teach up to the requirements of the College, he thought one of the first questions the Government would ask would be, "What are you doing for yourselves? at what price are you educating your students? and can you improve your own position before we attempt to give you help?" He was of opinion that the first thing the schools should do was to help themselves, and that could be done by increasing the fees.

Professor WALLEY said that the students were already very heavily burdened in various ways.

The PRESIDENT said he thought it a positive disgrace that schools could be found to give an education of a superior class involving the maintenance of a large and costly staff extending over three years for a fee something like forty or fifty guineas. There was very good margin for the schools to help themselves here.

Mr. J. F. SIMPSON said he gathered that if they succeeded in getting a grant it would simply enable the schools to go on teaching at such a ridiculously low rate of fees. To his mind that would in no way assist the veterinary profession. If the Council were in a position to go to the Government and say, "We intend to strike out a particular line for improving veterinary science, establishing an institute where certain gentlemen will be appointed to carry on investigations," and so on, he could then understand that the Government might possibly entertain the application; but if they were simply to ask the Government for a grant which they were to pay over to the schools they would be laughed at.

Professor WALLEY said that other teaching bodies had Government help, and increasing the fees would not be of much use without assistance from the Government.

Mr. MULVEY moved that the report be received and adopted.

Mr. KIDD, in seconding the motion, said that if the Council should get a grant from the Government, however small, he failed to see that there would be any difficulty in apportioning it.

The motion was then put to the Council and lost, five voting for and nine against.

Matriculation Education.

Mr. HUNTING proposed that the whole subject of matriculation be referred back to the Committee.

Mr. PETER TAYLOR seconded the motion.

Professor WALLEY said he had travelled from Scotland mainly with the object of the matter being considered. At present they were in the position that they must re-issue their prospectuses, and unless they did so they could not go on.

Sir HENRY SIMPSON said that the three months' notice would not expire until May, and that, therefore, if the matter were discussed it would be out of order.

Mr. THATCHER said it was necessary before the alteration could come into effect that it should be suspended for three months; and he had suggested that a special meeting should be called on the day, but at an hour prior to the first meeting in May, after the election of the new members of Council. The new members would then be in office, and there would, therefore, be a proper Council meeting.

Mr. WILSON said he thought the sooner the matter was settled the better; and that though the solicitor advised to the contrary, it was just possible that the matter could be dealt with then. The Council would remember that he had moved notice of a certain motion in connection with the alteration of certain Bye-laws; that was suspended. At the proper time it came on before the Council, and a special meeting was called to confirm the resolution. At the last meeting it was referred to a committee to draw out rules in regard to the Matriculation Examination, and to advise the Council as to the subjects which should be taken. One of the rules in the altered Bye-laws stated that the nature and extent of the examinations should be fixed by the Council from time to time. With all due deference, he thought the Council had full power to deal with the subject now; the only difficulty being whether it should have appeared on the agenda.

The PRESIDENT said he thought the report of the Matriculation Committee might be read, although it was not on the agenda.

The SECRETARY read the report.

Mr. HUNTING asked if the Committee had discussed the conjoint examination which the Council had previously settled.

The PRESIDENT said the Committee were instructed to consider the best mode of carrying out the preliminary examination.

Mr. HUNTING thought the Committee had gone a long way beyond its powers.

Sir HENRY SIMPSON said that he had attended the meeting of the Committee with regard to the conjoint action. It was all very well for the Council to pass resolutions to say that the College of Preceptors and another body should do a certain thing, but those two bodies must be asked whether they would consent. The College of Preceptors had been asked, and they had said, "No, we cannot be parties to it." It was no good for the Committee to report that to the Council. They did what most sensible men would do under the circumstances. They said, "What we want to do is to propound, for the benefit of the students, a scheme of preliminary education." The reply made by the College of Preceptors was that which was contained in the report of the Committee.

Mr. HUNTING urged his proposal that the matter be referred back to the Committee. They had apparently reported, as a Committee, simply that the Council should undo something that they had already done.

The PRESIDENT asked the Secretary to read the minute with regard to the resolution of the Council.

The SECRETARY read the following minute:—"Moved by Mr. Wilson, That Section 2, page 61, be amended thus: by striking out the first sentence of the clause, and substituting in lieu thereof, 'Students who do not produce one or other of the certificates referred to shall be examined by a Board of Examiners, appointed by and under the direction and supervision of this College, to whom they shall report the result of the examinations, which shall be uniform and applicable to the whole of Great Britain.'"

Professor WALLEY said he believed the word "conjoint" was introduced. He made a note of it at the time, and was quite clear that that was Mr. Wilson's intention.

Mr. WILSON said that something was said as to who were to be the examiners, and the words "Conjoint Board" were mentioned; whether the "Conjoint Board" was brought in the resolution he was not prepared to say. He agreed with Professor Walley that it was time the matter was settled. It was referred to the Committee, and he had moved that the report of the Committee be received and adopted.

Professor WALLEY asked whether it was proposed that the paper which had been circulated should be received and adopted.

The PRESIDENT said that that could not be dealt with until the special meeting.

On the motion of Sir HENRY SIMPSON, seconded by Mr. WHITTLE, the paragraphs of the report were considered *seriatim*.

Sir HENRY SIMPSON moved, and Mr. KIDD seconded, the adoption of the first paragraph.

Professor WALLEY said he could not see how the motion could be passed, because the Committee proposed to alter a Bye-law.

The PRESIDENT said they were simply adopting a report which would have to be dealt with at a special meeting.

The motion was carried.

Mr. WILSON moved, and Dr. FLEMING seconded, the adoption of the remainder of the report.

Mr. HUNTING proposed that the motion be not adopted, for the reason that the Scotch were jealous of all their national arrangements. The teaching in their schools was totally different from that of other schools. Up to the present they had had their students examined by the Institute, and they thought that the English wanted to control them more than was necessary.

Professor WALLEY said he agreed with Mr. Hunting up to a certain point. It was understood that it was to be a Conjoint Board. As far as he knew the Educational Institute of Scotland had never been asked anything about it, nor had any communication been made to them. He would much rather the matter remained as it was.

Dr. FLEMING said he thought the question ought to be treated as a professional and not as a national one. The College of Preceptors was the acknowledged body on the subject in the three kingdoms, and the recommendations which they had made were perfectly justified.

The motion was then put and agreed to.

The PRESIDENT said that at a special meeting which would shortly take place, he should propose that the alterations he brought into operation.

Sir HENRY SIMPSON asked what answer should be sent to Mr. Stanley. He would suggest that Mr. Stanley be informed that the rules for the examinations were in force at the present time, and that as his son was not already a student of the College he would have to conform to the new regulations.

Mr. Hunting's Motion.

Mr. W. HUNTING moved the following resolution, of which he had given notice of motion, "That definite hours be laid down by the Council for examination of students." The reason, he said, for bringing forward the motion was that he understood that some little time ago two students were refused examination because they were not there at the proper time. He also understood that about forty students were kept waiting in Edinburgh all day without notice, because it suited the examiners to go and see the Forth Bridge. What was sauce for the goose was sauce for the gander, and the examiners had no more right to keep the students waiting than the students had to keep the examiners waiting. He therefore proposed that the time be fixed, not only the day but the hour, so that the examiners might be ruled as the students were ruled.

Dr. FLEMING said he had no knowledge whatever of students having been kept at Edinburgh because the examiners went to the Forth Bridge. He was an examiner, and he had gone to the Forth Bridge, but it was on a Sunday, and he was not aware that students were examined on Sundays.

Sir HENRY SIMPSON asked in what section the students had been kept waiting.

Mr. HUNTING said he could not tell, but the examiners in the room must know whether his statement was true or not.

Sir HENRY SIMPSON said he could unhesitatingly say that no students had been kept waiting.

Mr. J. ROALFE COX said he had never heard till then that students had ever been kept waiting. Certainly in no examination in which he had been concerned had it occurred. It was quite news to him.

Mr. HUNTING said that if it were denied by the examiners of the "A," "B," and "C" Sections that such a thing took place he would withdraw and apologise.

Professor WALLEY said there was no representative of the "A" Section present. He could not see how the Council could regulate the hours; it must be done by the Secretary.

The SECRETARY said that in London they were very fortunate; they could calculate their time within a quarter of an hour or twenty minutes.

Professor WALLEY said that students had been keep waiting in Edinburgh, but it had not been the fault of the examiners as far as he knew.

Dr. FLEMING said the "A," "B," and "C" Examinations took place at the same time, and never to his knowledge had students been kept waiting because the examiners went to the Forth Bridge. The statement was not correct.

The PRESIDENT said that if there was no seconder to the motion the Council would proceed with the next business.

Mr. J. ROALFE COX moved the following motion, of which notice had been given: (1) "That, with a view to promote and maintain the dignity of the veterinary profession, this College take means to regulate the professional conduct of its members. (2) For the guidance of this College, that means be taken forthwith to ascertain what provisions with regard to their members respectively have been established by the Royal College of Surgeons, the Royal College of Physicians, the Society of Apothecaries, and the Pharmaceutical Society. (3) That means be taken forthwith by this College to acquire full power, if it has not now full power, to determine questions of proper professional conduct on the part of its present or future members, and power also to create and to enforce penalties for infringement or breach thereof." In a short time, he said, the Royal College would achieve the age of fifty years, and for argument's sake they might ask what might be its position in fifteen years hence. The existence of the College depended solely upon its members; it had no endowment, and it very much needed and deserved State assistance to enable it to carry out its function of promoting the advance of veterinary science and the respectability of the profession. It was most essential for the revenue of the College that new members should continue to be enrolled, and to that end it was essential that the practice of the profession should not be rendered in any way unremunerative and unattractive. He did not propose to pass in review all the signs of falling off, but it was necessary for him to call attention to a procedure which was calculated to create great disaster to the best interests of the College and the profession, for if the cutting down of the scale of fees which had been carried on for the last few years be made general, there could be no help from universal professional insolvency. There was scarcely a spot throughout the kingdom in which competition was not impoverishing the practitioner, In the struggle for life, of course, each man would do the best for himself. though there was nothing to prevent his giving his services gratis if he so chose; but he must remind the Council that during the last few years thousands of circulars of a most unprofessional character had been thrust on the public seeking to supplant existing practitioners, and succeeding in too many cases in seriously prejudicing and damaging them to the great detriment of the profession. If the veterinary profession from that and other causes were made so little worth entering, parents would not be slow in seeking some less unpromising pursuit for their sons. It could not be forgotten that the schools and the College were hand in hand in the matter. The prosperity of the schools was the prosperity of the College, and if students were deterred from entering the profession both would equally suffer. He thought, therefore, that the matter he had brought before the Council was one which demanded its earnest consideration.

Dr. FLEMING, in seconding the resolution, said he did not know of a more important matter. There could not be the slightest doubt that upon the conduct of the members of the profession depended its welfare. Signs of deterioration had been apparent for some time; and he felt certain that if the Royal College did not assume its proper functions to check the downward progress of the profession, it must sink still lower. The powers possessed by the College were the same as those possessed by other bodies which had a

hold upon their graduates; and it was in the power of the profession itself to say what it should consider as unprofessional conduct. He quite agreed with the mover of the resolution that the attention of the College should be drawn to the matter, and if possible that means should be taken, not only to maintain, but to enhance the dignity of the profession.

Professor WALLEY said he did not think the Council need trouble itself with the matter. The most natural course to adopt would be to bring any special case before the College, and consider it on its merits. He for one should most decidedly do all he could to maintain the status of the profession.

Mr. J. F. SIMPSON said they must all give great credit to Mr. Cox for his good intentions, but he would respectfully point out that they had ample power by their Act to determine what was and what was not unprofessional conduct, for it stated that any member might be removed if he was proved to have been guilty of conduct disgraceful to him in a professional respect. It was clearly for them to determine, when a case was brought before them, whether the offence complained of disgraced a man in a professional respect, and if they were to do as Mr. Cox suggested, it would be necessary to draw out a long list of offences which should be considered unprofessional. It might so happen that they might be unable to remove a man simply because his offence was not scheduled. In his opinion it would be far better to use their own personal influence, and not draw out a list of offences and watch for offenders. Offences undoubtedly would be committed, and in due course reported to the College, and then would be the time to consider whether they amounted to unprofessional conduct.

Sir HENRY SIMPSON reminded the Council that the Registration Committee was quite capable of taking cognizance of any breach of unprofessional conduct on the part of members of their own body. The question no doubt was, who was to bell the cat? He did not think it necessary to lay down any schedule. Any conduct which the Council considered unprofessional was unprofessional; and a man whose conduct had been brought before them could be called upon to act differently, or he could be struck off the Register. Personally, he thought Mr. Cox had done the right thing in the interests of the profession in bringing forward his motion, but he did not think the Council could adopt any set of resolutions, considering they had already got the machinery if they only chose to apply it.

Mr. HUNTING said that the fact that Mr. Cox, who was a leading man in the profession, had brought the matter forward showed that he thought, although the Council had the power of striking a man off the Register for grievous offences, there were slighter offences which required notice; and if those slighter offences were in some way suggested, that it might possibly prevent men from doing things which brought discredit to the profession. He thought it would be worth while considering some of the offences against the unwritten law which were certainly unprofessional. There were forms of advertising which were particularly objectionable, and he thought if a committee were formed to consider Mr. Cox's resolution, some conclusions might possibly be arrived at which would put a stop to some of the dirtier and baser forms of unprofessional conduct.

Mr. LAMBERT, while sympathising with Mr. Cox, said he thought the veterinary profession criticised itself more severely than any other profession. In many parts of London people could obtain both medicine and advice for sixpence; and quite recently he had seen in one of the medical journals that medicine and advice could be got from qualified men as low as twopence. He did not think the veterinary profession had gone quite so low in their charges as that. He had been in the profession for over thirty-five years, and he thought it had improved in every sense of the word, so that there was rather cause for congratulation than too severe criticism.

Mr. J. ROALFE COX said he had taken up the disagreeable task of bringing forward his motion entirely for the sake of the profession. He had done so because he knew that circulars had been issued in large numbers, first offering to do business at half the usual fees; and that bait not having sufficiently taken, the fees had been reduced to a third, and even to a sixth of the recognised and established terms. If fees became so unremunerative that no honest man could live, the College must suffer; for if the profession would not be worth the entrance of any intelligent man, then, inasmuch as the College had no revenue apart from the yearly number of students coming in, it must of necessity become bankrupt. The matter really deserved consideration, and he believed that every member would think twice if it were known to be under the consideration of the College.

The motion was then put and carried.

Mr. WOODS called attention to the practical examinations as carried out in London and in Scotland. In London the students were all examined from the same animals, and he suggested that the plan adopted in Edinburgh, where the examinations were held at the public slaughter-houses and on different animals, was preferable. He had known the students overhaul the specimens before the examination commenced.

The PRESIDENT said the authorities of the school referred to were quite at the disposal of the examiners, and were prepared to do whatever they pleased to suggest. He was surprised that, notwithstanding Mr. Woods' repeated presence at the Camden Town School, no mention had ever been made by him, or any other examiner, of any irregularity in respect of the students, nor had any request been made which had not as far as possible been complied with. The principal of the college only required to know what the examiners wished for, and it would be supplied.

Professor WALLEY said he should like to ask a question as to the students in Edinburgh from the two colleges being sent up for their examination in alphabetical order instead of the two colleges separately. There was a good deal of feeling in the matter. and he understood that the examiners themselves were frequently in a fix as to deciding the order for examination. He moved that the students be sent up for examination in alphabetical order from the two colleges.

Mr. J. ROALFE COX said that, having been associated with the examinations in London for a great number of years, he could speak of the great impartiality and fairness that was always exercised with reference to the selection of animals. In the examinations which took place at the Royal Veterinary College the horses were never seen, either by the students or the examiners, until they arrived at the college, and it was never the same horse. At Edinburgh, too, the horses were never seen until their arrival, and at Glasgow the horses were selected by his colleagues and himself from one of the large establishments there.

Professor WALLEY thought the matter could be met if the Secretary were to instruct the colleges to insist upon not allowing the students to see the subjects before examination. He would propose that the secretaries of the Scotch schools be instructed to send the students up indiscriminately from the two colleges in alphabetical order.

The SECRETARY.—Could it be done by numbers as well?

Professor WALLEY.—Yes.

Mr. WILSON seconded the motion, which was carried.

Messrs. Harrison, Roots, Rogerson, Rogers, Wilson, T. Batt, Edwards, Gostling, Slocock, Reid, Gowing, and Bryne were appointed to act as scrutineers at the election of members of Council at the forthcoming annual meeting.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

The General Annual Meeting and dinner of this Association took place on the 7th of March at the Great Western Hotel, Reading. There were present Mr. Albert Wheatley, F.R.C.V.S., of Reading, President for the year; W. Wilson and G. A. Drewe, Vice-presidents; Sir Henry Simpson, Windsor; Messrs. F. W. Wragg, London; Charles Carter, Guildford; J. Irving, Chipping Norton; J. A. Bull, Woodstock; T. B. Goodall, Christchurch; F. W. Hanks, Wantage; E. C. Howard, Newbury; E. J. Mellett, Henley; G. H. R. Wilkins, Lambourn; A. E. Barlow, Reading; W. Western, Bracknell; W. G. Flanagan, Reading; William Hunting, London; H. G. Rogers, London; J. F. Simpson, Maidenhead; A. L. Butters, London; J. L. Castle, Thame; T. W. Lepper, Aylesbury; R. J. Verney, Oxford; J. Varney, Winslow; J. P. S. Walker, honorary treasurer, Oxford; A. Sants, Bath; and H. Kidd, Hungerford.

The PRESIDENT proposed the election of Mr. W. Hunting, F.R.C.V.S., as an honorary associate.

Mr. KIDD seconded, saying that by rule 23 gentlemen elected as honorary associates must be men who occupy a distinguished position, either as teachers, writers, eminent practitioners, or benefactors to veterinary science. The profession owed a debt of gratitude to Mr. Hunting for the weekly periodical (*The Record*), of which he was the editor. In this way we look on him as a benefactor. Mr. Hunting was also an author, and they owed to him a very important book on Glanders. The proposition was carried by acclamation.

Mr. HUNTING thanked them very heartily for the honour they had done him, which was offered apparently in recognition of the work he had done in running *The Record*. A good deal had been said about the way in which it was conducted, but without arguing the question at length, he would say that making allowance for the weakness of human nature, he had conducted it as honestly as he could, and it had done fairly well. If anyone jumped on his toes he was rather apt to retaliate. His wish was to live on amicable terms with other people, and he hoped none of them would hesitate to pull him up if he overstepped the line.

Mr. John A. Bull, M.R.C.V.S., Woodstock, Oxon, was unanimously elected a member.

Mr. WRAGG proposed, and Mr. GOODALL seconded, that in future the names of members be printed, with the notice calling the annual meeting, as was done by some other associations.

Mr. Wragg's motion was carried *nem. con.*

Mr. J. F. SIMPSON gave notice to propose as an addition to the rule, "That any member whose subscription shall be in arrear for more than two years, shall cease to be a member of the Association."

Date of Meeting.

Mr. J. F. SIMPSON proposed "That the following resolution passed by this Association be added to rule 7, viz., That the president for the time being have power to alter the date of the meeting, to a day either a week before or a week after the fixed date." Their fixed dates had frequently been found to clash with the meetings of other associations and with other important engagements.

The PRESIDENT seconded.

After discussion the consideration of the resolution was postponed to the next meeting, in view of a conference of the various associations on the subject, which has been called by this Association, at the next annual meeting of the Royal College.

Place of Next Meeting.

On the proposition of Mr. MELLETT, seconded by Mr. IRVING, Oxford was unanimously fixed as the place of next meeting.

Ingestion and Inhalation as Methods of Infection.

The next business was to resume the discussion on the paper read by Mr. Hunting, at the last meeting of the Association, on the above subject.

Mr. WALKER expressed himself adverse to Mr. Hunting's conclusions generally. Mr. Hunting said, "with few exceptions, we believe that a disease which is contagious is always due to a specific organism," and then, "personally I believe very little in infection by inhalation; with the exception of Pleuro-pneumonia I should be almost inclined to doubt that inhalation spreads diseases at all amongst animals." If he made Pleuro-pneumonia an exception, it was very easy to make exceptions of other diseases also. It was admitted that Pleuro-pneumonia did not arise by animals being fed upon diseased subjects. Many other diseases they did not know so much about; but he failed to see why they should accept the theory that those diseases were always taken into the digestive organs instead of into the lungs. Take Strangles for instance. Most veterinarians who had been in practice any length of time could recall cases where Strangles broke out upon a farm. They always tried to localise the disease, but they would find that colts that had never been in contact with the diseased ones became infected. How had the disease been transmitted in such cases except through the air.

Mr. GOODALL, while dissenting from Mr. Hunting's theory, pointed out that insects and the smaller fauna were active agents in carrying contagion from place to place. Rats, for instance, would carry disease for miles. Still he held that a great many infectious diseases must be taken by the inhalation of minute germs in the air, as well as by ingestion. He gave details of an outbreak of Pleuro-pneumonia to support the theory of inhalation, as a *post-mortem* in several cases had shown the disease in the lungs, and not at all in the digestive track.

Mr. HUNTING said he had scarcely anything to reply to. Mr. Goodall had entered into the character of disease, but that had nothing whatever to do with the method of infection. So, again, whether disease was carried through the air or by other animals, or in whatever way, had nothing to do with the method by which it entered the system of the other animal, which was the only point he wanted to draw attention to in his paper. The general idea had been that the fact of finding a disease in the lungs of an animal showed the lungs to be the first part infected, and that through the air, because the air was the nearest way to the lungs. He did not say that might not be right, but his experience of the disease of Glanders showed that it was not always right. In Glanders they might have the lungs badly infected, as the result of giving glanderous matters through the stomach. That was not a theory, but absolutely the result of experiment, and he simply said that what could be proved by experiment in one case might occur in other conditions. He did not at all wish to be so positive as Mr. Walker thought he was, that all those diseases entered the system through the stomach. He was quite willing to allow that some might enter the system through the lungs, as Influenza in man and horse, Strangles, and perhaps Distemper in dogs. Probably some of them had been willing to put Cattle Plague into the same category. It had been shown, however, that all the excrements of the affected cattle contained the virus in quantities, and therefore it was easy to understand how the disease might enter the stomach through the grass being contaminated. He fancied the notion of inhalation being the common cause of infection originated in the days when they nearly all believed infectious diseases depended not upon a definite material object, but

upon some volatile gas. They could not prove a negative, but the fact had often struck him that the nurses at the Brompton Consumption Hospital were not liable more than other people to Tuberculosis, was evidence that inhalation could not be such a common cause as was generally thought. It was also a fact that the scrapings and washings of the walls there had very often produced the bacillus, and that even hanging a slide of glycerine and water in the air of a ward would collect baccilli. There were only two explanations why those nurses were not always affected—one that there must be predisposition to enable the atoms to act on the lungs, and the other that inhalation was not the usual way by which it entered the system. Then they had the positive experiments of feeding animals with tuberculous matter, and those were the only experiments that had successfully transmitted Tuberculosis from one animal to another. It was said at the last meeting that experiments had been tried with the ingestion of glanderous matter, and had failed. He had since then come across a successful experiment of Professor Simonds, in which he had given an animal one pailful of water, containing glanderous matter, signs of disease being shown three weeks afterwards. They might have animals standing alongside glanderous horses for weeks or months, and they would not be infected, but if they had a common drinking trough the disease would spread like wildfire. It was not very long ago that it was said Typhoid Fever spread in some peculiar way through the air. Now it was known that in almost every case the infection entered the system through the stomach. The same with Cholera. The idea used to be that it was blown across the Continent by a gale of wind. We now know absolutely that it did not enter the system except through ingestion. No one, again, had ever demonstrated the spread of Scarlet Fever by inhalation, but ingestion had been frequently proven. All he meant to suggest was that ingestion was a much more common way of infection than was generally thought.

On the proposition of Sir H. SIMPSON, seconded by Mr. WILSON, a very cordial vote of thanks was by acclamation passed to Mr. Hunting for his admirable paper.

Calculus.

Mr. CARTER exhibited a specimen of calculus, weighing no less than 10¾ ozs., which he had taken from an old pony after death.

The President's Address.

Mr. WHEATLEY then delivered the following inaugural address as president, and was frequently applauded:—

GENTLEMEN,—I cannot but feel that I am placed in a very honourable position as your President, and at the same time that it is a position I cannot fill in the complete way that I should wish, but since you were so good as to place me here for the year 1890, I will do all in my power to make up for my deficiencies, and I sincerely and honestly hope that this Association may not suffer by your choice.

Now, gentlemen, before going further, allow me to thank you exceedingly for your kindness in electing me your President. I would ask your kind indulgence to my faults and shortcomings, and that you will, one and all, assist me in carrying out the duties of the chair. With that assistance from you, which I am sure you will render to a brother, my share of the responsibilities will be immensely lightened.

The progress of the profession is a constant topic for discussion at our meetings, but there is a direction in which we ought to advance which seems to me not to have sufficient attention. Our Societies help us to know one another, they help us to act together more effectively, and they assist greatly in spreading scientific information. The reports of our meetings and dis-

cussions sometimes reach the general public, and anyone who reads them must see that we are collectively striving to elicit truth and to do our duty.

Our professional and scientific advance is, I think, more marked than our social progress. This is not due to any want of appreciation on the part of the general public, but simply to our modesty in not pushing ourselves forward. We might well take more part in public meetings and societies where matters directly related to our calling are under discussion. "Farmers' Clubs" and "Chambers of Agriculture" would welcome the assistance our members could give to many of their deliberations and our whole body would reap the reward of that assistance thus given by individuals. We might also appeal to the press more often with effect, if, when subjects trenching upon our calling are to the front we contributed a timely letter.

We might also take greater interest in those public duties which all good citizens recognise, now especially that Local Government has made every district more independent of the Metropolis and the Central Authorities. Animal diseases and public health are important subjects for the consideration of all County Councils, and the veterinarian should recognise that he is especially fitted to assist in framing regulations for dealing with these matters. We should also not repress a proper ambition for public honours, our profession has in recent years been recognised by the State, and includes amongst its members men who have fairly earned titles and honours.

Quite recently, too, a number of our colleagues have been appointed to the dignified office of "Justice of the Peace." All these honours reflect favourably upon our calling, and help to ensure for us a social position we should do well to claim more freely.

To increase our social position in the ways I have hinted at requires, perhaps, a wider view of life than some of us have been in the habit of taking, and it certainly requires a wider view of men and things than used to obtain with most of us. Too often we have contented ourselves by asking the question: What good can it do to *me?* Whereas the right question is: What good will it do *us?* We are, none of us, indifferent to public appreciation, but we have "hidden our light under a bushel."

The time has arrived when we may fairly claim to assume a more public position, and demonstrate to the country that our profession contains many members who are capable of doing good service outside of the narrow circle of every-day practice.

The value of the live stock of Great Britain is enormous, not merely from its quantity, but from its quality. The improvements in the care and management of animals and in the methods of breeding and using them are every day more evident. What share have we had in all this? I answer, a very large one. By the advice of individual members, by the action of our teachers, and by the publicity of our writers, we have contributed greatly to the gradual, but ever-increasing improvement.

Our horses, cattle, sheep, and pigs are the best in the world, their quality is sought for all over the world to improve the breeds of other nations, our superiority depends upon the maintenance of our live stock at the very highest stage of perfection, this can only be effected if it is carefully selected, carefully managed, and kept free from infirmities, especially transmitted ones. Our advice and assistance has had a great deal to do with this superiority, and we must continue to give it.

To our profession the stock-owner is already indebted for valuable assistance, but we have it in our power to still make his indebtedness greater, and we shall reap our reward in increased public appreciation if we not only continue our service, but widen its scope, and boldly claim more public recognition. In short, gentlemen, I say we must take a wider interest in all those subjects just outside of our daily practice, must show that our

knowledge is not only available for sick animals, but for the improvement of our healthy stock. We must impress upon the public that the veterinarian plays an important part in elucidating the ills that man is heir to, and that comparative pathology can only be advanced with his assistance. We must, also, not allow false feelings of modesty to prevent us claiming the position in which our knowledge can best be practically useful, nor must we decline that right and honourable publicity which is as essential to the progress of a profession as to the advancement of an individual.

You may think, perhaps, that this advice does not quite accord with my practice, but it must be remembered that we all have different faculties; some of you can speak, some of you can write, some of you, like myself, can best do good in the narrower sphere of intercourse with your clients. Let us each do what in him lies, but let us all bear in mind that we owe a duty not only to ourselves, but to our profession and to the public.

In conclusion, I would ask you to assist me in making the work of this Society more valuable, and to believe that I shall always do my best whether as President, or in any other capacity to maintain its honour and reputation.

The meeting closed with a vote of thanks to the President for his address, and also for the able manner in which he had conducted the business.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE annual meeting and dinner of this Association was held at the County Hotel, Newcastle-on-Tyne, on February 28th, the President (J. W. T. Moore, Esq.) in the chair. There were also present:—Messrs. A. Hunter, J. Gofton, J. E. Peele, G. Elphick, A. Peele, H. Hunter, Professor McFadyean, W. Hunting, W. Hunter, G. R. Dudgeon, E. E. Bennett, D. Macgregor, and W. Ashton Hancock (sec.); also Dr. H. E. Armstrong, H. E. Askew, and J. Stewart, visitors.

Letters of regret for non-attendance were received from Professors McCall, Walley, Williams, Axe, Pemberthy, Cope, and Duguid, and Messrs. Stephenson, D. Dudgeon (through illness), Greaves, Awde, and Farrow, jun.

Mr. F. Finney was nominated a member of the Association. The PRESIDENT then read his inaugural apdress.

GENTLEMEN,—In pursuance of the custom which has pertained at meetings of this character for some years past, I rise to address a few words to you by way of introducing myself as President ot the Society, and of inaugurating the more serious business of the year upon which we have now entered. Prefatory to the briet remarks which I am about to inflict upon you, I wish to offer you my very hearty thanks for the confidence you evinced in electing me to the presidential chair. On learning of my unanimous election, the first blush of modesty prompted mental enquiries as to why I had been singled out for distinction, and were it not for fear of casting doubt on your powers of discernment, I should like to say that I feel unworthy of the favour you have thrown upon me, and that you might have obtained a better man, but not a more zealous one.

I hope to be able to maintain—if not to excel—the interchange of social good fellowhip which is characteristic of this Society, and to continue the good record which it has scored for many years past in those matters more particularly pertaining to the objects for which it was instituted. At the end of the twelve months' trial upon which you have placed me, it will be for you to find a verdict.

I may as well confess at once to a feeling of personal gratification at my election, which feeling is engendered and maintained from the consideration that, comparatively, I am almost a stranger to you all, force of circumstances connected with my official position having brought me among you only five years ago.

In thanking you again, gentlemen, allow me to remind you that it depends upon yourselves whether or not your President is to be an ornamental one, or a useful one. Anyone looking over the reports of annual addresses of other societies will notice that the members are invariably asked to attend regularly, to read papers, bring specimens, and so on. Well, it may be necessary to do so in some of the milk-and-water Societies, but I conceive it is totally unnecessary for me to submit an exhortation of that kind to *you*. You know what your duty is, and do it without being asked, and it must not be said that the President of the North of England Veterinary Medical Association runs the risk of imitating the enterprising financier, who, having promoted a company, issued a report of a general meeting containing a vote of thanks to the Directors, and the Chairman for presiding, but omitting to state that he was the only one present in the room at the time.

I need not take up much of your time and attention by any lengthy reference to our own Society and its affairs, as you are all well aware of its position. Financially, we are in a satisfactory position. Numerically, there is no cause for complaint up to the present, but whether our strength will be maintained time alone will show. You will remember that some of our members desired the Society to follow the example of the travelling showman, and migrate from town to town in this and the adjoining counties for the convenience of the local members. After the arguments, *pro.* and *con.*, had been fairly discussed, the decision arrived at was to maintain the *status quo*, the majority of the members considering it far preferable to have a fixed abode, and meetings at regular stated times, than to pursue an opposite method. Any alteration would obviously entail additional expense, and increase the already onerous duties so admirably performed by our worthy Honorary Secretary. The dissentient members, however, did not take defeat very graciously, and the result has been the formation of a new Society, viz., the South Durham and North Yorkshire. We may consequently expect that some of our prominent members, whom we can ill spare, will secede from us. But I feel confident I am echoing the sentiments of you all in wishing the new society every success, in hoping that the two societies may work harmoniously side by side—if not together—and that we may still retain the valued support of our old disagreeing—but far from disagreeable—members.

That the formation of Societies like this has proved of benefit to the individual members and the profession at large may be gathered from the number which have come into existence during the last twenty years. It is owing to the practice pursued by president after president in making speeches, and threshing out all the interesting subjects until there is hardly anything for their successors to work upon, that I find myself somewhat in a dilemma as to the subjects on which I could base my few remarks this evening. This, therefore, must be my excuse if I reiterate remarks which have been made here or elsewhere. At one time I intended to eschew any reference to professional matters, but being reminded that we have arrived at a very interesting epoch in our career as a profession, it would be remiss not to refer to it. I mean the centenary of the Royal Veterinary College. One hundred years ago a small Agricultural Society, with the aid of a few influential noblemen, established this College, and, it may be said, planted the seeds which have grown into a profession of great national importance. In looking back through this long vista of years, we may well pause to review the progress made. Oftentimes we have been compared with our continental brethren. It is said "comparisons are odious"; if so, the odium cannot be said to rest on our side. If we be not quite so scientific and fond of research, we are, at any rate, more practical. The profession, as it exists to-day, is the development of the dogged energies of its members of the past century, unassisted by help from outside in the shape of State aid, Government grants, or muni-

ficent benefactions. Had extraneous assistance of this kind, and the personal emoluments and distinctions obtainable by Continental veterinarians fallen to our lot, I venture to say that to-day we should be occupying a much higher position than we do. As it is, we have good reasons to be proud of the edifice which has been erected, considering the materials to work upon, and the want of incentives to labour which have existed for so many years. When the Royal Veterinary College commenced in a small way of business one hundred years ago, the veterinary profession, as such, hardly existed. Since then it has flourished, and now can boast of four teaching schools, which send out a large number of graduates to extend its usefulness in all parts of the world. Beside the schools in this country, similar institutions have been established by British veterinary surgeons in the United States, in Canada, India, Australia, and Japan, so that our profession vies with other learned bodies in extending the general advancement of scientific knowledge and civilisation to far distant countries. During the last decade we may congratulate ourselves on having made rapid strides in almost every particular. Our social position has advanced, our professional knowledge has augmented, our literature increased and improved, our professional status (as embodied in the Charter of 1844) ratified and extended by the Act of Parliament, and lastly, but not least, we have gained the respect and confidence of the community.

Whilst thus briefly sketching what has been done, I will pass over profitless speculation as to what might have been done, to consider as briefly what may be done. With regard to our condition as a profession, there is still much room for improvement. The means are in our own hands. Each member can and ought to help directly, or indirectly; directly—those possessing leisure, opportunity, and intellectual capacity—by employing them in furthering the interests of the profession; indirectly—those not possessing these facilities, by abstaining from acts tending to bring us into disrepute.

Whether or not professional advertising be derogatory is a question frequently mooted in our periodicals. Well, it occurs to me that a great deal depends upon what may be said to constitute advertising, where it begins, and where it ends, and the occasion, mode, and manner of doing it. If a man write a book on a professional subject, which is often done in our own, the sister, and other professions—surely it is a mode of advertising, or bringing himself into notice! But can it be said that such is undignified and derogatory? I remember many years ago reading an advertisement inserted by an eminent London veterinary surgeon, in either the *Times* or the *Field*, I forget which, stating that he had arrived in Brighton for the season, and could be consulted at an address given. Compare this with placards paraded by a sandwich man, through a fair, announcing that Mr. so-and-so, M.R.C.V.S., had arrived in the town, and could be interviewed daily at the "Pig and Whistle." The object in both instances was similiar, but whereas no exception could be taken to the former mode, the latter is so outrageous that it is difficult to find words sufficiently expressive of one's indignation. Things of this kind are matters of taste, and to those devoid of all sense of the duty owing to their profession I would say, "Come join this, or some other Veterinary Medical Society, and be led into the paths of virtue."

Another question which often crops up and comes under the same category as advertising, is combining a vocation such as that of a farrier, horse-dealer, etc., with that of veterinary surgeon. In considering this question, I think we should remember that we are not greater sinners in this respect than other professions are, whereas our emoluments are very much lower. We all know that in many instances doctors are proprietors of drug stores—often under assumed names, as though they were ashamed of the surgical homes, lunatic asylums, retreats, and what not; engineers deal in iron, coal, etc.; architects and surveyors, in houses and land; lawyers in leases and other securities,

even to the extent of, in some cases, thinking their clients' property belongs to themselves. Why, then, should a veterinary surgeon be ostracised, as many would wish, if he can earn an honest penny by selling a horse? Horse-dealing itself is a legitimate pursuit, as respectable as dealing in any other commodity. The young man entering college is usually exhorted to devote his life to the study and benefit of his calling. In grandiloquent terms its nobility is impressed upon him, and he is invited to hesitate and depart, if he have not sufficient love for it to sacrifice almost every good thing in the world. Later on he goes into practice impressed with the words of the inaugural lecturer, full of zeal and good intentions to follow them to the letter. Alas! stern scenes soon surround him, the landlord and the tax-collector decline to accept a handful of microbes, or a bottle of attenuated virus, in satisfaction of all claims, and in despair he starts a forge, has a "little deal" occasionally, and pays twenty shillings in the pound. Is he to be blamed, and scouted out out of the profession as a rogue and a vagabond?

I may mention an idea that struck me recently. It seemed to me that the great body of general practitioners were not fully alive to the benefits derivable from the Veterinary Surgeons Act, and that much good would result by the formation of a Protection Society. The R.C.V.S. looks after the affairs of the body politic exceedingly well, and the National Veterinary Society and local societies cater for mental requirements, but our vested interests, and general business matters are left to take care of themselves. It seems to me that a combination such as I have shadowed out would strengthen the hands of the central authority, and prevent encroachments on the practice of duly-qualified men, which the act protects, and it is our own fault it we neglect to secure its benefits. The question of a scale of fees for certain defined work might also be entertained by such a society. As I am not in general practice, the matter does not affect me personally, and I only throw out the suggestion for what it may be worth.

Having secured public recognition of our value to the state, it will be for us to show that the recognition is deserved by taking our proper place in the work of elucidating the great problems of the day, such as the causes of contagious disease among animals, the methods to be adopted for checking, or eradicating them, and the means by which the public health can be shielded from diseases derivable from the lower animals. Our profession must aspire to be an authority on these questions, and not be content to play second fiddle to the medical profession, which would quietly ignore us—and deservedly so—if we do not persist in maintaining our position. A subject that has been brought forward very prominently of late is that of Tuberculosis, the main point being whether it should be included in the list of diseases, under the Contagious Diseases (Animals) Act. Almost every Veterinary Medical Society in the kingdom has passed resolutions urging that it ought to be so placed, and the Departmental Committee formed in 1888 recommended that it should be included. Those of you who have the Annual Report of the Agricultural Department for 1888, know the reasons why the recommendation of the Committee was not carried into effect, and to those who have not got it, I say get a copy as soon as you can, for you will find most interesting and exhaustive reports by Professor Crookshank on Actinomycosis, Anthrax, and Tuberculosis, with a number of coloured plates and diagrams.

Not only is the question of Tuberculosis a serious one for the stock-owner, but it has a grave aspect with reference to the food supply, and the health of the community. No doubt exists in the minds of rational men that, when the affected animal is in a state of emaciation, and known in the trade as a "waster," the carcase is totally unfit for food. Many of us go much further, and say that no carcase showing signs of Tuberculosis should be allowed into the market. But we know that such carcases are continually sold—with

the exception of a few districts—for human food, and when very bad, are made into sausages at once.

I know of nothing more monstrous than this condition of things, and I maintain that steps should be taken to ensure uniformity of action, and that it should be laid down authoritatively, that if an animal be affected with Tuberculosis no part of its carcase should be consumed. Ten years ago in Manchester, and four years ago in this room, I expressed the same opinion. With reference to the use of the milk of tuberculous cows, allow me to quote from Professor Crookshank's report, which says, "We must admit that there is no direct evidence of the transmission of Tuberculosis by milk from cow to man, but this may arise from the difficulty in tracing such a source of infection, owing to the long time which elapses before symptoms manifest themselves in man. Yet, if milk be a source of infection, we should naturally expect that Primary Tuberculosis of the intestine would be by no means an uncommon manifestation of the disease, and this in the adult is not in accordance with clinical experience. Quite recently Woodhead has stated that, from his experience in two large hospitals, he has been much struck by the fact that in children who had died from other diseases during the course of tubercular disease of the abdominal glands, there was frequently not any trace of tubercular disease in other parts, thus pointing to the intestine as the channel by which the bacillus made its way into the body. Woodhead also remarks that in a large number of cases of general Tuberculosis, where the possibility of infection by the pulmonary passages was evidently excluded, the tubercular process appeared to have invaded the body by the intestinal canal. These facts, taken in connexion with the occasional existence of tubercle bacilli in milk, went far to prove, in his opinion, that milk was a source of tubercular infection, especially to young children." Professor Crookshank says further, "That direct evidence of transmission of Tuberculosis by milk to man is wanting, but from the effect of such milk on lower animals it is reasonable to conclude, in the present state of our knowledge, that there may be danger in using the milk of cows with tubercular udders, and, therefore, strict inspection of dairies should be enforced, and boiling of milk before use will, as a rule, be a wise, if not an absolutely necessary precaution."

With reference to the transmissibility of the disease from animals to man, it is impossible to ascertain by experiment, unless Dr. Fleming's idea of using the criminals who have forfeited their lives to the law of the land be adopted; but there is nothing to prevent an animal being experimented upon with human Tuberculosis. This has been done by Professor Crookshank, who injected into the peritoneal cavity of a calf, some sputum from an advanced case of phthisis, with the result that death occurred in forty-two days, the *post-mortem* showing Tuberculosis in a most pronounced form. Professor Brown says, "The communicability of the bovine disease to man cannot be asserted on experimental evidence, but it is at least a fair conclusion that the disease in man and bones is inter-communicable.

Gentlemen, I fear I have trespassed on your patience too much with reference to the question of Tuberculosis, but the great importance of the subject must not be lightly passed over.

I venture to hope I have laid sufficient matter before you to prove the absolute need of a more thorough examination of dairy cows, and to show that a more thorough inspection of carcases is very necessary, and to my mind, this cannot be properly done until the time arrives when duly qualified-trained men are appointed to perform such duties, and those detestable nuisances, private slaughter-houses abolished.

After Mr. J. E. PEELE had addressed a few remarks, it was decided that the discussion on the President's address be adjourned until the next meeting.

EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE half-yearly meeting of the above association was held at the Bell Hotel, Norwich, March 14th, the president, E. J. Kitchin, Esq., in the chair.

The officers for the ensuing year were elected. These were: President, E. J. Kitchin, Esq., Norwich; Vice-Presidents, William Bower, E. Rudham, F. Low, Norwich; T. E. Auger, Wymondham; Secretary and Treasurer, R. G. Barcham, North Walsham.

Coming Election of Council.

The President proposed and Mr. James Thurston seconded; Professor Pritchard, Mr. F. Wragg, Mr. T. E. Auger and others supporting the motion, that Mr. G. A. Banham, Cambridge, be nominated as the representative of the Eastern Counties Veterinary Medical Association at the forthcoming election of Councilmen, the Society pledging itself to do its utmost to ensure his return as a member of Council."

The Secretary was requested to write to Mr. Banham asking his consent.

The President next called upon Professor Pritchard to give his discourse on—

CAPPED HOCK AND CAPPED ELBOW.

Commencing with the anatomy of the parts affected in these diseases, he minutely described both the similarities and differences in their structure, and also the parts immediately contiguous thereto; and impressed on the members the great importance of remembering these facts in the treatment of the two affections.

Remarking that external violence was in ninety-nine cases out of a hundred the cause of both diseases—in the case of the elbow from inner heel of the shoe in lying down—the Professor detailed the various forms we meet with in every-day practice, especially in the elbow; sometimes simply a sack full of fluid; another form, a network of connective tissue with spaces filled with either fluid or pus, and occasionally the enlargement is a mass of organised lymph.

Treatment of Capped Elbow.

In the simple form and in the first stages, the ordinary antiphlogistic measures are quite sufficient. In the two first forms, if further treatment is required slit the enlargement from top to bottom. Frequently the inflammation arising therefrom produces adhesion of the wall of the sac; if necessary, an ointment of Biniodide of Mercury 1 to 8, applied two or three days consecutively, will very much assist the healing process, and prevent the formation of tumour.

In the third form (Tumour), dissect it completely out. This can easily be done with the horse in a standing position if twenty or thirty minims of Cocaine solution be subcutaneously injected.

Capped Hock.

Begin with antiphlogistic means. Compression is not practicable, the pressure being always unequal and will chafe somewhere. Biniodide of Mercury, severely and continually applied, is, perhaps, about the best treatment. Oleate of Mercury and Oleate of Iodine are both very useful agents.

As a preventive means in case of capped elbow, he found a bolster or pad tied above the knee very successful; it completely prevents heel of shoe coming in contact with the elbow.

After a lengthy and animated discussion, in which most of the members present took part, Mr. J. Hammond, of Bale, introduced the subject of the recent outbreak of Pleuro-pneumonia at Holkham. In his preliminary observations

he dwelt on the importance of the point at issue, both to the private practitioner and the local veterinary inspector. After reading and commenting on Mr. Cope's report, Mr. Hammond remarked, that in preparing his report Mr. Cope appeared to have wholly ignored the facts, and restricted his attention entirely to the mere coincidence that the cows, previous to their illness, had been in contact with a convalescent bullock. Having heard all the facts connected with the outbreak, it remained for them to decide whether they considered Mr. Cope was justified in assuming that this recovered bullock conveyed Pleuro-pneumonia to the cows; thus giving publicity to a report so detrimental to Mr. Hammond's reputation. Official documents emanating from such authorities as Government Inspectors are always believed by the public to be extremely accurate, and altogether beyond dispute. How careful these gentlemen should be, therefore, to ascertain the true history of an outbreak before circulating their reports, and not speculate on theories unsupported by facts, and calculated to unjustly incriminate the private veterinary attendant or local inspector.

The following resolution was then proposed and unanimously adopted:—"Mr. Cope's report on the recent outbreak of Pleuro-pneumonia at Holkham is inaccurate, misleading, and unjust to Mr. Hammond. We are also of opinion that the theory assumed and believed by Mr. Cope 'that the recovered bullock conveyed the disease to the cows' is not supported by the true history of the outbreak."

The meeting terminated with a most cordial vote of thanks to Professor Pritchard for his address, and to the President for so ably occupying the chair.

R. S. BARCHAM, *Hon. Sec.*

MIDLAND VETERINARY MEDICAL ASSOCIATION.

(*Continued from page* 278.)

On the Continent, where Anthrax creates such great ravages, it is sheep that suffer most, and I am inclined to think that in this country many sheep die of the same disease, but are not reported. That is not the fault of the veterinary inspector; too frequently the farmer regards the diseases of sheep as inscrutable, or he is content with saying, "Oh, they died of Braxy."

I may here be permitted to refer to a point which perhaps does not strictly fall within the compass of my subject. What is the explanation of these mysterious outbreaks of Anthrax in districts where it is quite impossible to connect them with a preceding outbreak? The bacillus of Anthrax may lead an independent existence for a long time outside the body of an animal; it is an organism that may be cultivated with great facility on a variety of artificial soils, it can be grown on fæces if they are mixed with blood, and, as we know, it grows very freely on boiled potato. These considerations help us to understand that a very long period, and perhaps many generations of bacilli, may intervene between two successive outbreaks of Anthrax, and how difficult it may be to trace the source of infection.

In this connection I wish to allude to the supposed infectivity of artificial foods, such as linseed and cotton cake. There are some practitioners who, if they are called in to an outbreak, at once incriminate the cake if they find that the animals are being fed on that. I am not disposed to deny that cake may be infective, but nobody has yet published any satisfactory evidence that any particular samples of cake contained the Anthrax germs. If any one thought he had such cake to deal with, he could experimentally prove it by killing small animals like rabbits with it. A very instructive case was published by a veterinary surgeon in Germany a few years ago. In the province of Posen there was a farm where the loss from Anthrax in the sheep became so great that the farmer had to give up keeping that class of stock altogether.

To his dismay, one of his cattle died in the following January. He had no more deaths until January of the following year, and then two animals died in the same building. He had again perfect freedom from the disease for about twelve months, but in January and February he had five deaths from Anthrax. The veterinary surgeon suspected that the cause must be found somewhere near at hand, and he took a portion of the earthen floor of the hay-shed and inoculated six guinea-pigs with it. Four of these animals died from Anthrax. Moreover, by means of plate cultivations he was able to isolate the germ from the earthen floor. Then, on inquiry, it was found that early in the year prior to that in which the disease attacked the cattle, a shepherd had in this hay-shed skinned Anthrax sheep for their hides, and the earthen floor had thus become contaminated. The explanation of why the disease broke out only once in the year was that it was only about January or February that the bottom layer of the hay was served out to the cattle.

I come, in the next place, to speak about Tuberculosis. Let us begin by glancing at the way in which the meaning of the word has been changing during the past thirty years. As we all know, the term Tuberculosis was borrowed from anatomy, and was intended to refer to diseases where the lesions took the form of tubercles, that is to say, of small, well-defined nodules. But by-and-bye it was observed that such tubercles tended to undergo a peculiar softening, rendering their central part something like cheese, and hence it became the rule to regard caseation rather than tubercle-like lesions as the mark of Tuberculosis. Ten years ago, indeed, it was customary to pronounce everything tubercular that was distinctly caseous. But eight years ago Koch discovered the tubercle bacillus. He did not merely show that the bacillus was commonly present in tubercular lesions—he grew it outside the body, and showed that he had power to produce Tuberculosis at will by means of his artificial cultures. Since Koch's discovery we define Tuberculosis, not by the anatomical form of the lesions or their tendency to caseation, but simply as the disease caused by Koch's bacillus.

What are the characteristics of the tubercle bacillus, and how can we identify it? Fortunately, it possesses most distinctive characters, not so much in respect of its size or form, as with regard to its behaviour when treated with staining reagents. At the same time its form, and more particularly its mode of grouping, are so characteristic that any bacteriologist of experience would be right nine times out of ten in "spotting" the tubercle bacillus in the tissues. The manner in which we recognise it, and exclude the possibility of mistaking other germs for it is this: Most other germs may be very easily stained. In a solution of any ordinary aniline dye they stain in a few minutes as readily as the tissues themselves. These germs part with the colour just as readily. But the great peculiarity of the tubercle bacillus is that, compared with other microbes, it is very difficult to stain, and that when once the stain has penetrated it, there is great difficulty in getting the colour out of it.

There are a great many different methods of staining the tubercle bacillus, but they all have that for a general principle. What is known as the method of Ziehl-Neelsen is one of the simplest and best. It is a far simpler thing to stain by this method than, for example, to make a colic ball for a horse. The colouring matter in Ziehl-Neelsen's stain is what is called fuchsine, and the material that is used to dissolve it is a five per cent. solution of pure carbolic acid, with ten per cent. of spirit added. One simply puts the solid fuchsine in a bottle, taking care to have excess of it, and then adds the carbolic solution. A little of the suspected material is spread as a thin film on a cover-glass and fixed by passing the latter three or four times through the flame of a spirit-lamp. The stain must be filtered before use, and a few drops may either be allowed to fall on the up-turned film, or the cover-glass may be

allowed to fall film downwards on a watch glassful of the stain. The time required for staining varies a little with the temperature, but at ordinary summer heat fifteen minutes is amply sufficient. At the end of that time the cover-glass is dipped two or three times into a twenty-five per cent. solution of strong sulphuric acid in water, subsequently rinsed in methylated spirit, dried, and mounted in Canada balsam dissolved in benzol or xylol. As long as we are dealing with diseases of the lower animals, we may confidently regard all bacilli that are found to have retained the red stain in such a preparation as tubercle bacilli, since the only other known organism that resists the decolorising action of the strong acid solution is the bacillus of Leprosy.

Somebody will probably be disposed, here again, to consider that this may be very interesting as a matter of pure pathology, but to doubt whether it is of very much interest to the veterinary practitioner. I freely admit that it is not of so much advantage to him as it is to the practitioner of human medicine; but the reason why it is of such service in human practice as compared with veterinary practice, is that Pulmonary Phthisis is the most common form of Tuberculosis in man, and the physician, in the advanced stages of the disease can demonstrate the bacillus in the expectorated products, but with the lower animals, as we all know, Pulmonary Phthisis is of very rare occurrence. By far the most common seat of this disease in cattle is the serous membrane and the abdominal lymphatic glands, and when the lungs are affected the disease is seldom of the destructive character so common in man. You may have most tubercular lesions in the serous membranes and other situations, and yet it may be quite impossible to discover a single bacillus, because of their not being passed out in any of the natural secretions or any morbid product. At the same time there are many cases in which diagnosis might be confirmed by staining the bronchial expectorate, uterine discharge, and other discharges.

Then there is the question of examining milk, a question of very great importance from the public health point of view. Here again I must confess that I think the discovery of the bacillus is not likely to be of very great value to you—that is to say, I think that before one can demonstrate the bacilli in milk the diseased condition of the udder is generally so advanced that that cow's milk ought not to be permitted to be sold in any case, and it is perfectly useless to examine milk with the view of finding the bacilli unless discoverable udder lesions are present. I go even further, and say that even when tubercular disease is present in the udder, it often is a matter of considerable trouble to find the bacilli. In some instances, however, they may be found without difficulty, and in great numbers. I had sent to me some months ago a specimen of milk for examination, and I was horrified to find that hundreds of bacilli were present in a single field of the microscope; for anything I know, the milk may have been sold while it was in that dangerous condition.

But what we as veterinary surgeons have chiefly reason to be thankful for in connection with Koch's discovery, is that it has enabled us to decide definitely on the dead subject, what lesions are tubercular and what are not, and it has clearly proved that we were firmly in the habit of misnaming certain rather common conditions. As an example, I may site the so-called Lymphadenoma of the horse, which, in the great majority of cases, is tubercular. This is a view which has not commended itself to some whose position is very high in the profession. At the recent examinations held in Edinburgh, the secretary of the examining board sent up a specimen of so-called Lymphadenoma. This was seen by all the examiners in the final section, but it was not by anybody—and that includes myself—pronounced to be tubercular. I expressly said that I thought it might be tubercular, but I rather thought that it was not, inasmuch as it differed in some respects from the previous cases I had

seen. There was little or no caseation in it, nor was there any calcification. Now the specimen under one of the microscopes is taken from that case, and, as you may see, it contains the tubercle bacilli in enormous numbers. Here is a picture of another spleen which was sent to me a few weeks ago. This also proved to be Tuberculosis, although the lesions were quite soft and sarcomatous.

I don't think these cases could be mistaken by anybody for Glanders. While the tubercle bacillus is extremely difficult to stain, and decolorise, the glanders is very easy to stain and it readily parts with the colour even to weak acid solutions. As a point of clinical interest, I may mention in passing, that in equine Tuberculosis, death usually results from a secondary acute miliary Tuberculosis, such as is depicted in this drawing, but the disease is nearly always abdominal to begin with. The lesions take the form of tumour-like growths in the spleen and mesentery, these being sometimes as large as a child's head.

I now come to the means of diagnosing Actinomycosis, but as I have already occupied more time than I intended in speaking of these other subjects, I shall limit myself to drawing your attention to a micro-parasite that may easily be mistaken for the actinomyces. Some years ago Rivolta, an Italian veterinary surgeon, discovered in cases of scirrhous cord a parasite which he termed the discomyces. This he regarded as a degenerate form of the actinomyces, but subsequent investigations, chiefly by Rabe and Johne, showed that it was a parasite *sui generis*. A considerable number of cases have now been recorded in which the same parasite has been found in scirrhous cords. I take this opportunity to relate one of my own mistakes, and it is rather curious that it should have been exactly of the same nature as Rivolta's. I was aware that some cases of scirrhous cords had been shown to be due to the actinomyces, and I asked Professor Baird to let me have a scirrhous cord which he was about to excise. He did so, and on examining under a low power of the microscope a little of the purulent matter from the tumour, I at once saw what I took to be the colonies of the actinomyces. I made precisely the same mistake as Rivolta; for I have since returned to the examination of that case, and found that the parasite was not the actinomyces, but the discomyces. If anybody will cut the very firm resistent tissue of a scirrhous cord, he will find that it contains little soft centres composed of a peculiar coffee-coloured slimy material, which is very different from ordinary pus. On the blade of the knife he may see, even with the naked eye, little greyish or whitish bodies, which are colonies of the discomyces. A few months ago I had the opportunity to examine a case of what, during life, had been regarded as Cancer—a destructive disease of the hind leg of a mare, and which eventually had caused the death of the animal. I found that the lesions were of exactly the same nature as the new material of a scirrhous cord, and from the pus I was able to separate these little whitish grains in large numbers. I have placed some of them under one of the microscopes. This parasite has not yet had its life-history quite fully elucidated, but we have very strong evidence to show that it is the causal germ of scirrhous cord. It must be admitted that the theories which are commonly current with regard to the etiology of scirrhous cord are not very satisfactory. It is said by some that it is due to the surgeon neglecting to destroy the adhesions which form between the lips of the wound; on the other hand, in France exactly the opposite view is held—that it is due to the practitioner interfering with the wound. I think it is not unlikely that both theories are wrong. It is probable that at the time of the operation, or subsequently before the wound has healed, this parasite gets into the tissues, and then its persistent irritation leads to the formation of the inflammatory tumour. That is a point, however, upon which many of you are likely to be able to speak from experience, and my object is mainly to direct the attention

of practitioners to the occurrence of this parasite with the view of finding out in what proportion of scirrhous cords it is present.

The PRESIDENT expressed the indebtedness of the meeting to Professor McFadyean for his interesting and profitable discourse. A discussion followed, in which each of the speakers gave utterance to similar sentiments.

Mr. GREAVES (Manchester) said that the subject of the address was a magnificent one, and was gaining upon their own and the profession of human medicine every year.

Mr. MERRICK (Northampton) testified that in connection with researches which he had conducted into an outbreak of Anthrax in his own district, the microscope had been of great advantage to him. A number of sheep had died in connection with that outbreak, and their deaths had never been reported. He ascribed the outbreak to the fact of cattle having been fed on hay which had been flooded. He had traced Anthrax continually to that cause. Only the other day he had a case which was the first for twenty or thirty years in the district. Two beasts had died in a field. Twenty or thirty years before, a large number had died in a field close adjoining, and it had to be ploughed up and used for growing wheat. He feared that it was not possible for the veterinary surgeon in regular practice to become an expert microscopist.

Mr. L. C. TIPPER (Birmingham) did not think that the germs of Anthrax were contained in linseed or cotton cake; but he was of opinion that those foods, lacking certain elements to balance their nitrogenous properties, caused fermentation and decomposition of the blood, and so set up a species of blood-poisoning which developed Anthrax.

Sir HENRY SIMPSON (Windsor) asked whether Professor McFadyean had found any disinfectant which might prevent the germs of the disease from lingering in the soil or elsewhere for an indefinite period. Had the Professor any idea as to the time within which the bacillus might be found in the blood after death? As to the causal germ of scirrhous cord, he thought that the suggestion was feasible that it might be conveyed into the wound from the litter.

Mr. WARTNABY (Burton-on-Trent) said that he had once found Anthrax to be due to stagnant water in a field pond. By clearing the pond and filling it with fresh water, the recurrence of the disease was prevented.

Mr. GREAVES, rising a second time, asked whether the bacilli of Anthrax and the bacilli of any other disease could have a spontaneous origin. Could not an animal sometimes get rid of the bacilli by a natural process, and survive? He was inclined to the opinion that numerous cases of sickness were due to the presence of these germs. As to Tuberculosis, it was the opinion of some persons that if you could not find the bacillus the meat or milk was fit for food, but that if only a single bacillus could be found, it was unfit. What was the Professor's opinion?

Mr. OLVER (Tamworth) wished to know what the views of Professor McFadyean were as to the disposal of carcases infected with Anthrax. He had heard it maintained that if they were buried immediately after death, without being cut, the spores were not generated and the animal might be safely placed in ordinary soil. Some time ago, however, he had a case in which Anthrax reappeared, although the animal was buried intact and a whole load of lime put on top of it. He had been interested to hear it said that in the horse it was Tuberculosis of the lungs which killed. That had been his own experience. In every case of "Lymphadenoma" he had found the lungs studded with tubercular deposits.

Mr. TRIGGER (Newcastle) said there was not the slightest doubt that there were more sudden deaths from eating cotton cake than any other food he knew of. For all that, one could not always find the cause in the food. Some years ago he was called in to a very good cow taken suddenly ill, but he

only got into the shed in time to see her roll over and die. She was purging very freely. They had just fed her with cotton cake, and he was pretty well satisfied that he must look to the cake for the cause of death. He gave some to four rabbits and they all died. But neither the county analyst nor a skilled microscopist could find anything in the cake which would account for death. Some months after a servant on the farm gave a handful of the same cake to another cow, because they were short of other food; lapse of time had made him careless. The cow was very ill with an ordinary case of pain in the bowels, but that passed off. If the cause was any bacillus, why did she not also succumb? As to Tuberculosis, he did not think there was the slightest doubt in the world of its being contagious. Yet a case had come to his notice in which, in an unventilated shippon, a man had three cows, which were tuberculous to the last degree, and the man was selling milk day by day. Only within the last twelve months two farmers, neither of them men who were likely to arrive at such a conclusion for themselves, had come to him and said, "Is it possible that 'Grapes' is contagious?" One of them said he bought a "Grape" cow some years before, and had never been clear of "Grapes" in his calves since. How did Professor McFadyean think that the microbe was conveyed from one animal to another? He had been glad to hear it laid down that Lymphadenoma and Tuberculosis were often the same thing. That view confirmed his experience.

Professor McFADYEAN, in reply, said: Allow me, in the first place, to say how very thankful and pleased I am at the kind way in which the various speakers have remarked upon what I have said. With reference to Mr. Merrick's statement "that it was not possible for the every-day practitioner to become a skilful microscopist," I freely concede that. If he succeeded in that it would be at the expense of neglecting his other and more important duties. But there are some simple details of microscopic work that are at the command of everybody, and that fill up a gap not capable of being closed by any other method. Moreover, by giving the general practitioner a notion of the methods of bacteriologists, interest in these micro-parasitic diseases is stimulated, and it is only when that is the case that we are likely to make progress in the direction of knowing more about the causaton of such diseases. I think it is quite likely that the case to which Mr. Merrick referred was one of Anthrax. I did not intend to express myself as believing that all the cases of sudden death in sheep, although closely simulating Anthrax, are necessarily Anthrax. That very fatal disease of sheep, called Braxy, which prevails all over the length and breadth of Scotland, is not Anthrax. I am satisfied, however, that it is a specific disease; and it is a marvel that a disease which is the cause of such frightful mortality should not in these days of scientific and experimental inquiries be receiving more attention than it does. For the most part, I cannot agree with Mr. Tipper in believing that any disturbance in the proper proportions of the nitrogenous material in food will generate Anthrax. Errors of diet may of course predispose an animal which is the victim of them to infection, by weakening the resistance it offers to disease germs; but, believing that Anthrax acknowledges a single cause, I, of course, cannot believe that the disease can be generated by any mere error of diet. Sir Henry Simpson asked me about the use of a disinfectant. That is a point upon which our knowledge, thanks to the investigations of Koch, and others, is extremely accurate; that is to say, we know with almost mathematical accuracy what the relative strength of germicidal substances is. A one per cent. solution of corrosive sublimate (mercuric chloride), or sulphate of copper, and even weaker solutions than these, are absolutely fatal to the Anthrax bacillus and its spore, even by the method of simple wetting. But that is not the important question. In the case of Anthrax the difficult question is, not what will be fatal, but where is

the bacillus, that we may apply our disinfectant to it? And it must be admitted that many cases seem to baffle the most earnest investigation. As to when the bacilli disappear in cases that spontaneously recover, my belief is that in general the bacilli cannot be demonstrated at any time in blood that is taken from the large veins of such animals.

Sir HENRY SIMPSON.—I meant, supposing the animal died, how long may they be demonstrated?

Professor MCFADYEAN.—That is quite a different point, and I am able to answer it a little more explicitly. It is perfectly certain that the Anthrax bacilli, if they are excluded from the air in the dead carcase, and if putrefactive decomposition is permitted to go on—which of course does not require the excess of air—disappear with great rapidity; and it is generally impossible to demonstrate Anthrax bacilli in putrid blood. The bacillus of Anthrax cannot hold its ground in competition with putrefactive bacilli. I wish it were more generally known that it is better in sending blood for examination to fill the bottle only a quarter full, so as to leave some air. If the bottle is filled with Anthrax blood and corked tight, then in forty-eight hours, in summer-time, it may be impossible to demonstrate the presence of Anthrax bacilli in the blood. Regarding the disposal of carcases, I think the statement quoted by Mr. Olver is in general correct. If an Anthrax carcase is buried intact, it will be a harmless carcase as regards Anthrax infection, whenever decomposition has advanced; but with this saving-clause. Suppose such an animal has had a hæmorrhage into its nose or its trachea, that means that Anthrax bacilli have been exposed to the air, and put into the conditions necessary for the formation of spores. In such a case the carcase would not be harmless, for putrefaction does not affect the spores. Moreover, it is just a question whether the Anthrax bacilli normally form spores in the alimentary canal during life, since some oxygen is present there, and when once spores have been formed, the carcase may retain its infectivity for a perfectly indefinite period, in spite of putrefactive decomposition and any other natural change taking place in the soil. With reference to Tuberculosis of the horse, I am glad to learn that there are some, at any rate, who are beginning to believe that the horse is subject to that disease, and that many so-called cases of Lymphadenoma are tuberculous. It is very remarkable that the horse, which has an almost absolute immunity from tubercle by way of inoculation, and which certainly seems to have a large measure of immunity from natural means of infection, should develop it as a most malignant disease when he does contract it. There is no animal in which the lesions contain so many bacilli. As to Mr. Trigger's case, in which several cattle died after having been fed upon cotton cake, I am prepared to admit that the cake may have contained the germs of Anthrax, but, of course, I don't think it is proved to have done so. I think it is possible that these cases were due to some vegetable irritant, which even an analyst with some microscopic skill might not be able to detect. Mustard seed, very similar in appearance to cotton seed, is very fatal to cattle. What makes me doubt the suggestion of Anthrax is that, as a rule, one cannot certainly kill rabbits by feeding them with Anthrax material, though it is quite a different thing if one inoculates with the smallest quantity of such material. As to milk, to express the estimate which I have formed of the danger of milk, I may say that I have never allowed my own children to taste unboiled milk. I take it myself, because, unfortunately, I did not begin soon enough with boiled milk, and I have not been able to acquire the taste for it; in fact, I would rather take it unboiled, and the risk. There is always a doubt as to the purity of the milk one gets in cities, and I think the careful mother of the family will always see that it is boiled. I am satisfied that here lies the chief danger of a relationship between bovine and human Tuberculosis. It is a far greater

danger than the possible source of infection through eating tubercular flesh. As to Mr. Greaves' question about taking the bacillus of Tuberculosis as a test whether any carcase ought to be used for human food, I believe that the matter may be stated scortly in this way: If you can demonstrate in a particular carcase a tubercular lesion, you cannot assert that any portion of that carcase can be consumed without an element of risk. In many cases it is a small risk, but I would not eat such meat if I were paid for it. I am certain that there are cases of Tuberculosis where it is very difficult to find the bacilli, even where a little portion inoculated to a susceptible animal may produce Tuberculosis with absolute certainty. The bacilli we can demonstrate, but the spores escape observation unless they are still contained in the bacilli. Tuberculosis is no doubt a contagious disease. Several stock-owners of my acquaintance have arrived at that conclusion from the overwhelming evidence of facts. It is probable that small quantities of expectorate containing bacilli find their way to the exterior, and are subsequently dried. The fæces may also contain the germs. Both help to constitute the dust in the air, and are inhaled; or, lodging on the food, they are taken into the alimentary canal. I agree with Mr. Trigger that there is a very striking resemblance between the tumour-like lesions in Tuberculosis of the horse and the pig, but while in the horse they always contain enormous numbers of bacilli, one has frequently to search carefully in order to find many bacilli in the lesions of the pig. I have been asked about Glanders bacillus; that, I should have told you, cannot be demonstrated by the aid of the microscope from natural cases of equine Glanders—from nasal discharges or farcy pus. It cannot be distinguished from accidental organisms which are always found along with it. For comparison with the tubercle germ, I have placed a specimen showing the bacillus of Glanders under one of the microscopes.

On the motion of Sir HENRY SIMPSON, seconded by Mr. WIGGINS, a hearty vote of thanks was accorded to Professor McFadyean, and Mr. Trigger gave notice that at the next meeting of the Association he would propose that the Professor should be elected an honorary associate. The proceedings then terminated. It was arranged to have the next meeting at Northampton.

The members afterwards dined together, and the usual loyal and appropriate toasts were given.

SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

(*Continued from page* 275.)

Turning to inoculation, this mode of dealing with the complaint has not received the attention from the powers that be which I think it deserves. The repeated successful results in Scotland and abroad, the great confidence with which its promoters and supporters speak of its efficiency, entitles it to a more extended field of operation; and as Professor Williams said at Galashiel's Farmer's Club the other day, "A combination of slaughtering affected, and the judicious inoculation of 'in contact' healthy animals, would tend more to the suppression of the disease, than the indiscriminating slaughter." Yet I would go further and suggest that the animals be branded at the same time, so that they must be kept on the premises for breeding, dairying, and feeding purposes; thus preserving our stocks, saving the pockets of the ratepayers, and not interfering with or suspending business. This would, I think, meet all requirements, be more congenial, and give greater satisfaction than the present system of wholesale slaughter, which is decimating our breeding stocks. The loss in this particular is at present not much felt, but the time will come when the young, now destroyed by the parent, will be required, and they will not be there. But if compulsory slaughter has to be the order of the day—and it seems likely to be carried to

a further extent, if we are to judge from the deputations to the Minister of the Board of Agriculture—a great reform is needed. If the disease be due to imported cattle, then a law of quarantine must be enforced at the port of debarkation; but the greatest reform is wanted in our public auction marts. As already stated, cattle are entered in the names of various individuals, not being the owners, and are passed from one auction to another, as the following extract will show:—

"A cow which was exhibited at Aspatria Agricultural Show has had a number of homes. Early in life it was sold at £5, next at £13, then at £18, again at £20, afterwards at £26. Recently it realised £35 to go to an Edinburgh dairy. This will in all probability be its last home."—*West Cumberland Times.*

This indiscriminate transit of cattle to and fro is, I consider, one of the most dangerous modes of spreading the infection. The Government or the Local Authority should institute a registration of all animals that are entered at a public auction mart for sale, recording the name of the owner, his residence, and the colour and class of animals; the buyers would then be protected and not victimised as they are under the prevailing system.

Again, when an outbreak is reported, the officials of the Local Authority should cause all animals on the premises to be carefully examined by two veterinary inspectors, and for those found diseased only one-half of the value should be awarded. As the law stands at present, there are those who make a boast that they have realised money by having Pleuro-pneumonia, and are in a better financial position than they ever were before. This state of things ought not to be; it is not fair to the ratepayer, and the sooner the law on this point is amended the better.

I cannot sit down without saying a few words on Tuberculosis, for I consider it as all-important as Pleuro-pneumonia, claiming, as it does, more victims than the latter disease. Although I have seen and known an enormous quantity of tubercular animals sold for human food, without hearing any bad effect, yet, from the nature of the disease all animals should be destroyed, and compensation granted to the extent of three-quarter of their value. My observations lead me to think that it is due more to hereditary principles than either inhalation or ingestion, and that it should come under a separate heading or Act. If it was brought under the Contagious Animal's Act, it would soon cause as great alarm and consternation, when an animal was condemned, as Pleuro does at the present time. The serious nature of the malady is such, that a deputation of veterinary surgeons and others should be formed, and lay the matter before the Minister of Agriculture.

I had prepared a more extended paper, but the zeal of our Secretary is such, that he thinks the subject of dishorning cattle of vastly more importance than anything I could have brought before you, in supplementing and opening up the discussion on Mr. Hutton's paper read at the last meeting.

Yet I think if there is one thing more than another that should engage the attention of the veterinary profession as well as the farming community, it is that of feeding stuffs. In these go-a-head times, the enormous amount of money yearly expended on artificial food for cattle is proof sufficient that veterinary surgeons should be acquainted with their nature, purity, and composition. Representing, as I do, a Farmers' Supply Association, where something like 600 tons of linseed cake, 700 tons of decorticated cotton cakes and other feeding materials are annually sold, at the cost of about £10,600, I think I can speak as to their use and abuse with some little confidence.

Mr. ANDREW HUTCHESON, farmer, Dundee, in proposing a vote of thanks to the President for his address, endorsed the remarks that had been made as to

the remedy for Pleuro-pneumonia. The action of their local authorities on this question had been most absurd, and instead of being a help it was a hindrance. The value of inoculation had been fully demonstrated over and over again, and he held that the Government would be very much to blame if they did not institute a searching inquiry in regard to the subject.

The following gentlemen proposed by the SECRETARY, and seconded by Mr. CUNNINGHAM, were unanimously elected Members of the Society, Mr. W. Hepburn, M.R.C.V.S., Coldstream; J. McDougall, M.R.C.V.S., Helensburgh; De Jong, M.R.C.V.S., Edinburgh.

Mr. JAMES CLARK, F.R.C.V.S., Coupar Angus, then read the following paper

"ON THE DISHORNING OF CATTLE,"

In bringing the question of dishorning before the Scottish Metropolitan Veterinary Association, I propose to do so in as few words as possible, and give a plain, practical account of the operation as carried out in every day practice. I find a great amount of sentiment and prejudice against the operation, and trust this paper and the subsequent discussion will, to some extent at least, assist in removing some of the erroneous notions which may be seen in the public prints from day to day.

The first question to be considered is, How far the operation is necessary and justifiable?

A good deal of difference of opinion exists among farmers themselves; this, on consideration, is easily explained. Farming conditions and operations vary so much in different parts of the country, that what may be quite unnecessary in cattle-breeding districts is found quite the opposite in cattle-feeding centres, and I venture to predict that, with increases in cattle-feeding under the improved system of covered courts, the operation is sure to extend. From practical experience I find it utterly impossible and inhumane to keep Irish or American cattle together with horns, and this particularly with animals on winter keep. Every farmer must know the many serious injuries which result from non-interference—they are simply too numerous to mention. Among some of the more prominent, however, may be mentioned injuries to horns, broken ribs, causing Pleurisy, goring and ripping of the skin and protrusion of the bowels. Choking undoubtedly is another frequent result, also abscesses of the most formidable appearance. From this, it is evident, something must be done to protect the animals, in order to put the weaker on equal terms with their stronger neighbours. The general opinion I find among those best able to judge is, that nothing short of total dishorning is effectual and satisfactory, and that the danger and risk incurred by the animals from goring is out of all proportion to the severity of the operation.

If we next look at the beneficial result of the operation from an economic point of view, it will also be seen how important a factor dishorning becomes. It renders the cattle comparatively docile, they can feed without annoying each other, they take less time to eat their food, and consequently get more time to rest. Smaller quantities of food do them more good, and they thrive and show condition quicker. This question has been very prominently brought before the public during the last few weeks, and it must be apparent to them that farmers are in real earnest over the question. Meetings of the most influential and popular character have been held in Perth, Cupar-Fife, Forfar, etc., where resolutions have been unanimously passed in favour of dishorning up to a certain age, and as being both justifiable and humane for the animals. I most emphatically object to the term cruel, and hold it is not at all applicable to dishorning. I with confidence urge that the operation is ostensibly for the safety and benefit of the animals, and protest against the charge that it is carried out with the view only of making the cattle look better.

Polled cattle are more valuable on account of the reasons previously urged.

Every one knows that it is immaterial to the butcher whether they have horns or not. The operation has been designated as brutal, barbarous, and savage, strong terms to be applied to any who may be actuated by the best and most humane motives, and is a serious reflection on the humanity and intelligence of those operating. One need not be surprised at such opinions being advanced, when it will be remembered that a number of years ago, in a prosecution case held in Ireland, a member of the Royal College of Veterinary Surgeons went into the witness box and declared the operation as cruel and unnecessary, and, at the same time, made the extraordinary statement that it was quite possible to remove the horns and expose the brain, and the animal still live. Fortunately, history does not go further and state how long the poor animal was likely to do so. Strange to say, a conviction took place as a result of this evidence.

I find that opinions differ as to the best age for operating. After long experience I am forced to the conviction that really the best time is from six to twelve months old, but the time can be safely extended, if necessary, up to the age of two years. The time of recovery will, of course, depend greatly on the dimensions of the horn. At the first-mentioned period the wound heals very rapidly, and usually without suppuration. After that age the recovery is a little longer in taking place.

Calves can be dishorned at two or three months old; but in clumsy hands might be made a more painful operation than it really is in older animals, from the fact that the horn is not properly formed, and a considerable portion of skin necessarily requires to be removed, and at this age searing with a hot iron is carried out, which on the tender head must be very painful, and infinitely more to be avoided than the operation in older animals, which is on them carried out by the saw or shears, and in this case requires no searing. When about to operate I place the animals in a confined or small place where they can be easily secured, and so as to prevent mixing the dishorned with those waiting for operation. They are then brought out singly and placed over a good bed of straw, hobbles are applied, and the animal cast. I may here state that I always adopt this method for close dishorning. To operate in the standing position is improper, and cannot be carried out without submitting the animal to greater pain than is necessary. After casting the animal the head is well drawn in towards the chest, a small firm bundle of straw should be placed under the neck, this depresses the head, and is of great advantage. The operator takes his position at the back of the head, a small tenon saw, not too broad, is then placed at the root of the horn and in such a way as to remove the horn from the back of the ear outwards. The animal is then rapidly turned over, and the remaining horn removed in the same way. It will be found of great advantage and convenience to the operator, assistant, and animal alike, if the right and left hand be used alternately. In that case the operator is always at the back of the animal, and operates with more precision. Do not be tempted in any way to arrest bleeding, as no harm will arise from it. I am absolutely opposed in every shape and form to the use of the actual cautery (searing), it is more painful than the operation, and is altogether unnecessary. The wound heals by the first intention, as a rule, and especially if the animal is put in comfortable quarters. I would here warn the unwary never to mix newly dishorned cattle with those naturally polled. I have occasionally seen cases of secondary hæmorrhage by fighting.

As already stated, no fear need be apprehended from bleeding at time of operation; but secondary bleeding will not stop without surgical interference. In cattle over two years, I find half-horning and tipping, in feeding animals on full supply of food, meet in most cases, the necessities of the case; it does not cure, but certainly mitigates, the evil. The question of knobs or

wooden and brass balls, need not be discussed here; they are by all, except theorists, considered of little use, and certainly no advantage over tipping or half-horning for feeding cattle.

Dishorning by shears, a sample of which I show, can be used with great expedition, and this without the trouble of casting the animal. I am, however, on the whole, opposed to the use of them, and especially if used for more than removing the tips. I am aware that many use them for half-horning, and I can urge no case of bad results; but it must be evident they have a bruising or crushing tendency, which it is wise to avoid. I am still more opposed when they are used close to the head, and am of opinion this should never be done. The operation, as you will observe, is of the most simple character, but some little detail in the shape of after treatment is necessary, if the operator wishes to be uniformly successful. I am convinced that no man has a right to operate on animals, in this or in any case, without considering their comfort; and any deviation from such a course is apt to bring discredit on the operation. I well remember a case which occurred in my own practice, a good many years ago, where I operated on a lot of cattle which were then turned out to grass and kept there during very stormy, unfavourable weather. As a consequence, they recovered slowly. Since that time I dictate my own terms, and insist that all animals are properly and carefully attended. The great secret of success depends on not exposing to heat and flies in summer, and to cold, rain, wind and frost. Such attention will be certain to ensure good results. It is well known to those present that many absurd ideas are entertained as to the results of the operation, and especially a great deal of stress and alarm is put on the fact that we have sometimes a discharge of matter from the frontal sinuses. I admit that it is better to avoid this, if at all possible; and if attention is paid to comfort of animals, as already suggested, it will be found the percentage of cases will be extremely small. I would specially call attention to the fact that in everyday practice the presence of matter is of little consequence; it does cause discomfort and retard the healing process, but does not necessarily interfere with a good and successful recovery. I have yet to learn what difference or danger exists with discharges from the frontal sinuses other than we find in a profuse discharge from the nose, which we know is not accompanied with pain.

Lockjaw is said also to occur as a result of the operation; that is contrary to all my experience, and I know men of about forty years' practice who never heard of such a case; and, although not denying its possibility, I greatly doubt its probability. Inflammation at the seat of operation is said to follow. I can also give this the most emphatic denial; it only occurs as a result of the most careless treatment, and is not a usual accompaniment of the operation. I have only seen three true cases out of thousands of operations. It cannot, therefore, be said to be an everyday occurrence. I know it is also stated that means are taken to cover up the sinuses with wadding, tar, etc., and the hair brought over so as to hide the operation; this I never saw or practised, and know it is not done in my locality. It is highly objectionable, and no right-thinking person can justify such a course. But such an action, which I am sure must rarely happen, cannot be held as condemnatory of dishorning when rightly performed.

A very much debated point, and one on which a great deal of difference of opinion appears to exist among veterinary surgeons, is the question of the amount of pain suffered by the animal. As it is quite impossible to get this from the animal, the next and only means at our hand is to form, first, an opinion on the structures involved in the operation; and, secondly, any evidence that may be seen as an expression of pain after the operation.

With reference to the first point, we already know that the outer shell, or horn proper, is a continuation of the outer skin, and is quite insensitive to

pain. The next structure is the matrix, or layer of vascular and sensitive tissue, which covers the outer surface of the horn core, being, in fact, a continuation of the inner or true skin, to which it is of similar structure. We then have the horn core, or conical prolongation of the frontal bone, which is insensitive. Human surgeons tell us that in amputation no pain is felt when passing through bone in healthy condition. It will from this be seen that in reality the only sensitive structure is the matrix; and from the extremely small proportion of this tissue, I assume that pain is only momentary, and not necessarily continuous. At least the only logical deduction one can come to is this—when we know from practical experience that animals rise from the operation and commence to feed, not rashly as if in pain, but in the usual way, lick themselves, chew the cud, and speaking from personal knowledge with cows after operation or removal of ingrowing horns close to the head, no diminution in usual supply of milk is shown. Such facts speak for themselves. Every veterinary surgeon knows how quickly cows lose milk when in pain. Need we, therefore, wonder that farmers fall back on dishorning as the only expedient when its performance is easy and in no respect dangerous to the animal. If such were the case, farmers would be the first to suffer loss, and would soon give up the practice as detrimental to their interests.

Lord M'Laren, in giving opinion on a former case, embodies the question at issue in a few words, which must become historical in all dishorning trial cases, when he says it is "a customary operation performed for a rational purpose, in the belief that it was necessary for the welfare and control of the animals." Before I bring this paper to a close, I beg to draw your attention to a publication issued, containing an account of the English trial held at Blofield Petty Sessions in November, 1888. I recommend its perusal to all interested in the question; it will for interest hold its place with any novel. Once you start to read, you are bound to finish it.

In looking over the evidence for the prosecution, given by thirteen veterinary surgeons, I find they all condemn the operation, and testify as to its cruelty. We cannot doubt that it is their conscientious opinion, but the startling fact is, How do they come to form an opinion at all, as I see on cross-examination six admit they never performed the operation? The question was not put to the others apparently, but I assume they would have been on the same platform had such been the case.

This pamphlet also contains a paper on dishorning, which was read at Peterborough before the National Veterinary Association, and which was put in evidence for the prosecution, and urged, as they could not bring forward all the veterinary profession, this was to show that the veterinary profession disapproved of dishorning. The resolution reads as follows: "The National Veterinary Association strongly disapproves of the indiscriminate practice of dishorning." Surely such a resolution cannot be held by the prosecution that the meeting approved of all the paper. The discussion, as may be seen by the printed *Transactions*, was not all on one side; and to have shown fairness towards the defence, it would have been necessary to have given the discussion in full.

I would not have drawn your attention to this matter, but as a member of the National Association I protest against the attempt to prove that the action of fifty-six members can be held as representing the voice of the veterinary profession, which consists of about 3,000 members. Now, observe what we find for the defence in this memorable case. Fifteen gentlemen of good reputation and large experience, farming each from 200 to 4,000 acres of land, all positively agree that dishorning is necessary and humane, and certify that they have had pigs killed, and also cattle, and large numbers maimed and injured, some permanently, and that they have been under the

necessity of dishorning, and who also testify that they have operated very largely, and with the best results, still an adverse decision is given. Strange fate, when we find the general order of things reversed—namely, theory being triumphant over practice. One other point and I am done. In this self-same trial an attempt is made to prove that the Highland and Agricultural Society are against dishorning. At page 19 it reads as follows: "It was subsequently brought before the Society; and on 1st December, 1874, a resolution of the Society to the effect that it had never sanctioned the performance of the operation of dishorning, that it considered it a cruel practice, was passed." What, again, are the facts of the case? The resolution was come to at a meeting of directors, twenty-four being present, and as such, a resolution was never put to a full meeting of the ordinary members of the Society. Can such a resolution be taken as an expression of opinion of the Highland and Agricultural Society? A good opportunity would occur at the next annual meeting of the Society, to be held in Dundee in July next, when members interested could put the question to the vote.

A long and very interesting discussion followed, in which all the speakers, with one exception, declared in favour of dishorning. Some sixty or seventy letters of apology for absence were received, and several of these were read by the Secretary, all pointing to the beneficial effects of dishorning. Professor Baird, of the Royal (Dick's) College, gave it as his opinion that it was much better that all animals should, by dishorning, suffer a little for a day or two than that the weaker should be constantly subjected to torture by their stronger neighbours. Mr. Cameron, Berwick-on-Tweed, as the Inspector of Berwick Cattle Market, wrote that the demand for dishorned cattle was increasing, and that to put knobs or brass balls on the horns as a substitute was humbug. Mr. Simcox, Drogheda, wrote that in his district, where the operation was extensively carried on, the value of the cattle was considerably increased by dishorning, and the cattle throve much better.

Mr. POTTIE, Paisley, said a deal of ignorance was displayed by those who applied the terms of cruelty to the operation of dishorning. It inflicted no more pain on the animal than was caused to a human being by the extracting of a tooth. The naturalist found that a fly did not suffer pain on losing its leg, because it licked sugar immediately afterwards. If they applied that reasoning to cattle after dishorning, they would find that they took their food heartily and throve much better.

Principal WILLIAMS said he had always maintained that it was necessary to dishorn, but at one time he was against the operation being performed close to the head. Since the recent trial at Haddington, however, he had gone most thoroughly into the matter, and the whole staff of the college had been turned over to make a most minute examination of the structure of the head and horn, with special reference to the nervous system of the horn. He gave a lucid description of the structure of the horn. He showed from a specimen present that the horn at the base was a hollow substance, whereas in the middle of the horn the core was solid, so that although there was a greater diameter to cut through at the base, there was not any more sensitive matter to cut through than there was in half-horning. He also showed that the nerve trunk from which the nerve filaments in the horn branch off enters the horn on the inner front just above the eye, so that if the operator commenced on the inner side the first stroke of the saw would sever the nerve-trunk, so that the cutting through of the other nerve filaments and other substance could convey little or no sensation of pain during the remaining second or two that the operation lasted.

Mr. HUTCHESON, Dundee, denied that farmers performed the operation from a selfish point of view, and maintained that dishorning was in the

interests of the animals themselves. It was much less painful than the docking of horses' tails, and the latter operation was not so necessary. He defended the character of the farmers of Scotland as humane men, and protested against their being placed in the dock and tried like wife-beaters.

Mr. THOMAS SWAN, cattle salesman, said his experience led him to favour thorough dishorning, and he mentioned that of the many cattle that had passed through his hands that day there was not one that had not been dishorned. The practice was not only absolutely necessary, but it was generally adopted throughout the country. If they were to put a lot of Canadian or Irish cattle into a court with their natural horns, they would never have time to get fat, as they would be too much occupied in fighting.

Mr. SPREULL, Dundee, spoke of the serious injuries inflicted by goring. He was inclined, however, to prefer the shears to the saw, but the general opinion of the company was that while the shears did well for tipping, they were not so suitable for close horning.

Mr. FERGUSON, Pictstonhill, Perthshire, said that in his part of the country dishorning was an imperative necessity. He held that it was a gross absurdity to talk about its being so painful, seeing that the cattle took their food with apparent relish and enjoyment immediately after it. A friend of his—Mr. Fenton, of Dronley—recently got home a lot of Irish bulls, and the animals were resting themselves in the court after their journey, when Mr. Fenton went in and dishorned the lot, and they never rose after the operation.

Principal WILLIAMS—Do you mean that they never rose again?

Mr. FERGUSON—I mean that they never troubled themselves to rise and make any bellowing about it.

Mr. CAMPBELL, Kirkcudbright, gave it as his opinion that the dishorning of full-grown animals was a very painful operation, and should not be performed on an animal over two years old, but should be confined to calves. He thought that a deal of suffering must inevitably be inflicted on the animals through the air coming in contact with the membrane lining the sinuses.

Professor W. O. WILLIAMS said it had been demonstrated in the East Lothian case that dishorning close to the head was a less painful operation than half horning or tipping. As regards the after consequences, the advantages were all in favour of close horning, for in that case any pus that was formed got free exit to the outside or down the sinuses, whereas in half horning the pus burrowed in the horn core and set up inflammation. As to the suffering that was said to be caused from exposing the sinuses, that was all a mistake, for the sinuses were in connection with the nostrils, and the air was always passing through them by inhalation.

Mr. HUTCHESON said they got their American cattle at the age of two and three years, and he did not see how they could dishorn them when calves.

Mr. GREAVES, V.S., Manchester, said he was the Inspector for the Manchester Society for the Prevention of Cruelty to Animals, and he had been prejudiced against the dishorning of cattle, but after hearing the views of the gentlemen who had spoken that day, and particularly after the very lucid way in which Principal Williams had treated the subject, he had become converted, and he would never again enter the witness-box to give evidence against any one who had been accused for practising the operation. If they were to be guided by sentiment, they might as well object to the ringing of a pig or a bull.

Mr. CLARK having replied on the discussion, he was, on the motion of Principal WILLIAMS, cordially thanked for his paper.

THE DINNER.

The members of the Society afterwards dined together. There were

thirty gentlemen present. Mr. Henry Thompson, President of the Society, occupied the chair, being supported by Mr. Thomas Swan, Edinburgh; Mr. T. Greaves, Manchester; Principal Williams, of the New Veterinary College, Edinburgh; Mr. James Watt, J.P., Carlisle; Mr. Buttar, Corston; Mr. Ferguson, Pictstonhill; Mr. Clarke, Coupar-Angus; and Mr. Potter, Paisley. The croupier was Major Philips, Army Veterinary Department, Piershill. After the loyal and patriotic toasts—Major PHILLIPS and Professor W. O. WILLIAMS replying for the Army and Volunteers respectively—Mr. T. GREAVES proposed "The Scottish Metropolitan Veterinary Medical Society," the toast being acknowledged by the Chairman. Mr. SPREULL, Dundee, proposed "The Essayist—Mr. Clarke," in a eulogistic speech.

Mr. JAMES WATT, J.P., Carlisle, the head of the well-known firm of Little and Ballantyne, then gave the toast of "The Agricultural Interests," coupled with the names of Mr. Hutcheson, Dundee, and Dr. Webb, of the Aspatria Agricultural College. After passing a very warm eulogy on their highly-esteemed President—Mr. Thompson—who, he said, was not only a veterinary surgeon of the highest standing, but was also the life and soul of the Aspatria Agricultural College, and of the Aspatria Agricultural Co-operative Society, Mr. Watt proceeded to say that arable agriculture was probably never in a worse state than it was at the present moment. He believed, however, that it was again beginning to be on the ascendant, but it was day by day becoming more evident to them all that it was by their live stock rather than to their corn growing that they must look for the success of their British agriculture. He trusted that the task of dealing with the Pleuro scourge would soon be vested in a central authority, and that this dire disorder would soon be stamped out from amongst them. The Pleuro question was a much more serious question than this of dishorning. At the same time, he considered it was absolutely necessary to dishorn Irish cattle which were to be kept in courts, for the cantankerous nature of the Irish people seemed to have entered into the brute creation over there. He thought, however, that they might breed a lot more cattle themselves than they presently did, and they would not likely require to dishorn these, or they should go to Pictstonhill for some of his "doddies," which did not require dishorning. The doddies also were much more easy to dispose of than those great big rungs of Irish cattle, as the king of the cattle trade—Mr. Swan—could tell them.

Mr. HUTCHESON, in reply, said, that as regards the matter of dishorning, the gauntlet had been thrown down to the farmers of Scotland, and he and Mr. Ferguson had taken it up, and he had no doubt they would be victorious. As regards the question of store cattle, he could not understand why they should be shut out from the vast supplies of stores which the States could send to them if they were only permitted to do. These cattle had at present to be all slaughtered at the port of debarkation, or they came to this country as tinned meat. But if the stock feeders of this country could get these cattle to feed at the prices which their owners realised for them, there would not then be the same disparity that there presently was between the price of stores and the price of fat stock, and one of the greatest barriers in the way of the agriculturists of this country would be removed.

Dr. WEBB also responded briefly.

Mr. D. YOUNG, of the *N. B. Agriculturist*, then proposed "The Veterinary Profession," coupled with the name of Mr. Campbell, Kirkcudbright. He referred to what Mr. Watt had said to the farmers of this country requiring for the future to look more to their flocks, and their herds, and their studs, rather than to grain growing. But they all knew that they could not command success as stock-owners unless their stocks were maintained in a state of health, and they all knew how easily heavy losses could be incurred by

any illness or accident among their stocks. That showed, therefore, the great and growing importance of the veterinary profession, whose skill enabled the stock owners to maintain their stocks in a healthy state. There were, however, many insidious diseases which were still very imperfectly understood, and were the means of causing great loss to stock owners. He saw there a director of the Highland Society, and he would put it to Mr. Buttar whether the National Agricultural Society of Scotland had acted wisely in spending every year for the last ten or twelve years a sum of £700 or £800 a year on a series of experiments with manures which were now admitted on all hands to be of no use whatever, while, on the other hand, the Society had only expended £25 a year on the advancement of veterinary science? At the showyard meeting at Melrose the directors pledged themselves for the future to devote a reasonable share of the money spent on scientific research to the advancement of veterinary science, but so far at least they had not redeemed their pledge.

Mr. CAMPBELL briefly acknowledged the toast.

Mr. BUTTAR said he had been greatly impressed with the most lucid way in which Principal Williams, the veterinary adviser of the Highland Society, had dealt with the matter of dishorning. He frankly admitted that he had now come to see that the vast expenditure of money which the Society had for the last ten years been lavishing on its Chemical Department had proved to be wasteful and practically useless, and he further admitted that some of the experiments proposed for the coming year were puerile in the extreme, such as experiments to determine whether nitrate of soda should be sown in the winter time so as to be washed into the drains before the plants were there to take it up, or whether its application should be held over till spring, when the roots of the plants were there to make good use of it. He was, also, more than ever impressed with the desirability of the Society doing all that lay in its power to encourage veterinary research, so that those diseases which brought trouble and loss upon stock-owners should be brought more effectively under the control of their veterinary advisers. He pledged his word to do what he could to induce his co-directors to restrict the expenditure on the Chemical Department, where it was doing little or no good, and devote a reasonable share of the grant for scientific research to the encouragement of veterinary science. And if it was necessary that the pressure should come from the outside, and if Mr. Cowe brought forward at the Dundee meeting the motion in regard to the Chemical Department which he moved at Melrose, he (Mr. Buttar) would feel bound to give that motion all the support that lay in his power.

Professor WILLIAMS said he was very proud to see such an influential meeting assembled to hear a paper read by one whom he might call his eldest son, for Mr. Clarke was the first pupil of his who had secured the diploma of the Royal Veterinary College, London. It was now just about a quarter of a century ago since the venerated sire of their friend, Mr. Ferguson, of Pictstonhill, wrote to him to say, "Send on your best student to be our vet. in Coupar-Angus," and he sent them Mr. Clark, who had remained with them ever since. Respecting what Mr. Hutcheson had said about the desirability of admitting store cattle from the States, he could testify, in the most emphatic manner, that no Pleuro had ever been introduced into this country by cattle from the States. On one or two occasions there had been an outcry about an animal from the States having shown symptoms of Pleuro, but when these symptoms were closely examined, it always turned out that the symptoms were those of Tuberculosis, or something quite different from Pleuro. It was true that there was some Pleuro about New York, but Pleuro had never crossed the Alleghany Mountains, and the cattle could be relied on from the great cattle-rearing States of the West with

perfect safety to the stock owners of this country. The surplus stock of America had to come to this country anyway, either as tinned meat, or as live stock to be slaughtered at the port of debarkation, so that their coming would not, in the slightest degree, affect the price of beef in this country; and if the stock feeders could in that way get store cattle at from £3 to £4 per head less than they were presently paying for Irish and Canadian stores, as their friend Mr. Swan assured them they could, it would mean a deal more profit to them. This was one of those matters which would have to be rectified by the advocacy of the press, which was now an agency of supreme power in the country. He begged to propose the toast of "The Press," coupled with the name of Mr. D. Young, of the *N. B. Agriculturist.*

Mr. YOUNG briefly responded.

The proceedings, which had been very enjoyable throughout, closed shortly afterwards. R. RUTHERFORD, F.R.C.V.S., *Hon. Sec.*

PATHOLOGICAL SOCIETY OF LONDON.

TUBERCULOSIS IN BIRDS, WITH OBSERVATIONS ON THE RELATION OF THE DISEASE TO LEPROSY.

AT the meeting of the above Society on April 1st, Dr. WALTER SIBLEY read a paper, and showed specimens collected from several classes of birds as a continuation of his former communication. Giving first a more complete description of the histology, and then showing specimens illustrating the nature of the disease, among which were tubercular tumours connected with bone such as from the ribs and in connection with the knee-joint from a peacock, he next mentioned that in some birds the deposits in the viscera closely resembled the leprous bodies found in man. A remarkable analogy existed between Tuberculosis in birds and Leprosy in man in the extreme abundance of the bacilli, which for a long time exercised but little effect on the surrounding tissue, and multiplied to an enormous extent without causing sufficient inflammatory action to lead to breaking down and ulceration. Again there was the close resemblance of the early deposits to the leprous bodies, and the presence of the bacilli in the lymphatic vessels, and also the chronicity of the disease associated with the presence of nodules in various tissues, together with the rarity of pulmonary deposits, especially in the early stages. In snakes the disease often began as subcutaneous nodules crowded with bacilli, and for long periods without deposits in the viscera. The etiology of the disease was next dwelt upon. He believed that heredity played a very large part. The infection theory, namely, that the birds consumed bacilli with their food and so contracted tubercle was not convincing. In the case of fowls the disease was limited to certain broods, and other birds, such as pigeons, living on the same spot, continued exempt. The disease had been watched on one farm for six years, and it had apparently spread to a neighbouring one through the interchange of eggs for sitting. The direct experiment of feeding birds on tubercle bacilli had so far been negative. Reference was made to the experiments of Ribbert at Bonn, and of Strauss and Wurtz in Paris, who had for a year fed hens on sputum from phthisical patients, and in no case did the birds become tubercular. While in Germany, he had fed pigeons on sputum rich in bacilli, also with negative results. Of the organs which suffered the most the spleen stood first, and was often enlarged many times its natural size from deposit, when there was only microscopical deposit elsewhere. Thus far he had found Tuberculosis in the following birds dying naturally in confinement, as demonstrated from the microscopical appearances and the presence of bacilli: Canaries, corncrakes, doves, finches, fowls, geese, guinea-fowls, pea-fowls, pheasants, pigeons, swans, and vultures. It did not appear that the carnivorous were more exempt than the graminivorous species.

Mr. ROGER WILLIAMS considered that the histological details of the tubercles in these cases differed from those present in tubercles in man.

Dr. LITTLE asked if it was possible to distinguish in birds those which were the subjects of tubercle during life.

The PRESIDENT asked Dr. Sibley by what means fowls and other birds acquired tubercle.

Dr. SIBLEY replied that he had never been able to satisfy himself that either man or animals ever had tubercle in a state of nature. In South Africa the natives never got tubercle until they came in contact with white men and their civilisation. The only ways of recognising Tuberculosis in birds during life was by the extreme emaciation, with distension of the abdomen, unless (as occasionally, though rarely, happened) there were tubercular masses attached to the bones or elsewhere on the surface. He had not been able to follow Mr. Roger Williams's objection, as he considered that the epithelioid cell was an essential element in a tubercular granuloma.

ROYAL AGRICULTURAL SOCIETY.

AT the Council Meeting held on April 2nd, Sir JOHN THOROLD stated that Professor Brown had presented his usual monthly report (A) and the quarterly report of the Royal Veterinary College (B), which were ordered to be published with the proceedings of Council. The Worshipful Company of Farriers had accepted (subject to one or two verbal changes) the provisions of the scheme for the examination and registration of farriers as amended by the joint conference, and the Royal College of Veterinary Surgeons had accepted the scheme except as regarded the phrase "Farriers *as* Shoeing-smiths," which they proposed should read "Farriers *or* Shoeing-smiths." This alteration having been accepted by the Worshipful Company, the Committee recommended that it also receive the sanction of the Society.

(A)—Professor Brown's Monthly Report.

"*Pleuro-pneumonia.*—In Great Britain in the four weeks, ending March 22nd, there were twenty-four fresh outbreaks of this disease, sixteen in England, in the counties of Cumberland, Hants, Kent, Lancaster, London, and Stafford; the eight outbreaks in Scotland occurred in Edinburgh and Perth. The number of cattle attacked was 150, viz., 100 in England, and fifty in Scotland; while the number of healthy cattle slaughtered in contact was 260 in England, and 237 in Scotland. In Ireland there were four fresh outbreaks of Pleuro-pneumonia in the four weeks, all of them in the North and South Dublin Unions; thirty-eight cattle were attacked, and 146 healthy ones in contact were slaughtered.

"*Anthrax.*—There were five outbreaks of this disease reported in England, in Lincoln (Kesteven), Sussex (West), York (East and West Riding). In Scotland three outbreaks of Anthrax occurred in Banff, Dumbarton, and Lanark. Altogether eighteen animals were attacked, eleven of which died. In Ireland there were two outbreaks of Anthrax, and six animals attacked, three of which died and three recovered.

"*Swine Fever.*—In Great Britain there were 225 fresh outbreaks of Swine Fever, and 1,304 pigs attacked; 673 diseased swine were killed, 516 died, 131 recovered, and 208 remained alive at the end of the week. In Ireland sixteen outbreaks occurred, and forty-three pigs were attacked.

"*Rabies.*—In England eight cases of this disease were reported, all of them in dogs, in the counties of Hants, London, Middlesex, Notts, Sussex (West), and York (West Riding). In Ireland seven cases of Rabies were reported in dogs in the counties of Carlow, Cork, Galway, Leitrim, Limerick, and Londonderry."

(B)—Quarterly Report of the Royal Veterinary College.

Investigations into outbreaks of disease among farm stock have been carried on during the last quarter at the College, and several inquiries have been conducted by the officers of the College in different parts of the country.

In the beginning of the year an inquiry was made into an outbreak in a herd of beasts in Sussex. The herd was divided into seven lots located at different farmsteads; of these the disease has appeared in three. In one instance eight animals have succumbed, in another three, and in the third one.

The malady first appeared on the 26th December, since which time twelve beasts have died. On inquiry into the question of food and general management, it was found that all the animals were housed and fed on grain and cake of various kinds supplied from the same stock. In addition they also received hay, which was derived from several sources, and in the case of three of the farmsteads green furze was also being employed. All the grain and cake was of foreign production; it was, therefore, impossible to trace its connection with any particular source of contamination. The fact of the disease having confined itself to those farms where furze was being used is important, as this description of forage suggests an explanation of the way in which the tissues of the mouth may have been wounded, so as to admit of the inoculation of any virus to which they may have been exposed. The furze was of particularly strong growth, and the spines upon it large and penetrating, conditions eminently calculated to injure the mouth and render it receptive of the contagion. Foreign bones for manurial purposes have been largely used on the farm, and as the disorder has not previously been known to occur upon it, these and also the grain and cakes may for the present be regarded as suspicious of having introduced the contagion there.

As means to prevention of further spread of the disease it was recommended that all the food stuffs then being used should be discontinued, and the sheds and other parts of the premises with which the diseased cattle had been in contact should be thoroughly cleansed and disinfected. On these measures being adopted the disorder ceased at once.

An inspection was also made of three Jersey cows, two of which were found to have tumours in the udder. On inquiring into the family history of the animals, it was found that they were all the produce of one cow, which had been recently slaughtered in consequence of an ulcerating growth in the same organ. On a *post-mortem* examination being made of this animal, similar growths to that existing in the mammary gland were also found in the abdomen—near to the intestines.

The milk of the cows was submitted to microscopic examination in search of tubercular organisms, but none were found. As, however, the cases were most probably Tuberculosis, it was recommended that the use of milk for human consumption be discontinued, and that one of the affected cows be slaughtered for further examination.

Experiments in protective inoculation in Anthrax and Swine Fever have been continued, and recently some investigations have been made in reference to the effects of inoculation with pure lymph taken from the lungs of the cattle affected with Pleuro-pneumonia. The results up to the present lead to the conclusion that when the lymph is perfectly free from septic organisms no irritation or other local or constitutional effects are produced, even when the inoculating fluid is introduced into parts of the body which are considered to be dangerous localities.

Numerous morbid specimens from cattle, sheep, and swine have been received at the college, including tuberculous deposit in lungs, liver and other

organs; Hydatids in lungs and liver of cattle and sheep; and Actinomycosis in the glands in young cattle.

The district veterinary surgeons have reported serious losses among lambs from rheumatic swellings of the joints (joint ill), associated with inflammation of the umbilical cord (navel ill), in various parts of the country.

Investigations are now being carried on at the College in reference to the organisms of Pleuro-pneumonia and Swine Fever, Horse-pox and Cow-pox in regard to their relation to each other, and also in the effects of a new disinfectant which promises to be of some value as a preventive in contagious diseases of farm stock. (Signed) G. T. BROWN.

March 31st, 1890.

Army Veterinary Department.

Gazette, March 25th.

Veterinary Surgeon on Probation, Fitzpatrick Eassie, to be Veterinary Surgeon (ranking as Lieutenant). Dated 11th September, 1889.

Gazette, March 28th.

ARTILLERY VOLUNTEER CORPS, 5TH LANCASHIRE.—Arnold Porritt, gentleman, to be Veterinary Surgeon.

First Class Veterinary Surgeon J. A. Nunn has been granted the local rank of Inspecting Veterinary Surgeon, while employed with the Chittagong column, Chin-Looshai expedition, of which he is senior Veterinary Officer.

Gazette, April 18th.

2ND CINQUE PORTS (EASTERN DIVISION, ROYAL ARTILLERY).—Veterinary Surgeon W. Plomley to be Veterinary Surgeon. Dated 1st April.

4TH DURHAM (WESTERN DIVISION, ROYAL ARTILLERY).—A. Peele, gentleman, to be Veterinary Surgeon. Dated 19th April.

Obituary.

Mr. G. H. Pyatt, M.R.C.V.S., Nottingham, died from Phthisis on April 12th, after suffering for several years. He graduated in 1869, and immediately afterwards commenced practice in Nottingham, where he soon established a good reputation, and gained a large measure of success and esteem. He was veterinary surgeon in the South Notts Yeomanry Cavalry.

The death has also been notified of J. Mitchell, M.R.C.V.S., Coddington, who graduated in 1846; and of W. M. Barber, M.R.C.V.S, of Kingston-on-Thames, a graduate of 1877.

Notes and News.

RHEUMATISM IN JAPAN.—Our Japanese contemporary, the *Sei-I-Kwai Medical Journal*, states, in illustration of the supposed influence of the climate of Japan in causing Rheumatism and Neuralgia in foreign residents, that horses imported into Japan and China and other countries are soon disabled by Rheumatism.

BLEACHING OF HORSES.—A curious statement comes from Arkansas concerning a gang of horse thieves who had for their chief assistant a young woman—a bleached blonde—with the nickname of Sorrel Sue. She was given this name because she always appeared in public riding a sorrel horse. Her excellent horsewomanship and her dashing manner brought her many admirers. The shooting affair which brought her into notice was an ordinary case of plain jealousy. Two of her admirers, both members of the gang, fought for her favour. One was killed, and the survivor was severely wounded. A surgeon was sent for. He mistook the direction and walked into the cabin occupied by "Sorrel Sue." Before he could be hustled out, he saw certain things which aroused his suspicions. These he reported to the sheriff, who, with a posse, managed to surround the den of the horse thieves, capturing Sue and two of the gang. The sheriff, though pleased with the capture, was more then elated at the discovery of the peculiar method of disguising the stolen animals adopted by the gang. He found that Sue had applied the means of bleaching her own hair to that of the horses. When the posse entered, they found a horse enveloped in a jacket made out of rubber coats, being treated to a sulphur vapour bath. The appliances were very ingenious, and worked very well. A black, or bay horse, would be stolen and run into the bleachery. After its colour was changed, and the tail and mane trimmed, the disguise became so pronounced that without any great risk the animal could be taken in daylight through the very district from which it had been stolen. It was Sue's business not only to superintend the bleaching, but also to ride the animal out of the country.

PROLONGED INCUBATION OF HYDROPHOBIA.—Dr. V. Desguin reports the following case of Rabies after two years' incubation and treatment by M. Pasteur. In March, 1887, a young man, aged 24, was bitten in the face and neck by a mad dog. The wounds were cauterised with nitrate of silver two days afterwards. On the following day the patient went for treatment to the Pasteur Institute, where he remained about three weeks. On May 18th, 1889, the first symptoms of Rabies appeared. On the 20th M. Desguin was called in; he observed all the usual symptoms of Rabies. On the 22nd spasms, nervous excitement, and expectoration were only calmed by numerous subcutaneous injections of morphine and atropine. The patient, who preserved his consciousness throughout, expired in convulsions on the following afternoon.

PROTECTIVE INOCULATION IN AUSTRALIA.—Following on the recent Intercolonial Stock Conference, and in view of the enormous losses from Anthrax, Pleuro, and other diseases, and on a report that the microbes of Pleuro have been discovered by a Lyons (France) scientist, the Minister of Mines, New South Wales, has suggested that Dr. C. Wilkinson, the lecturer of pathology at the Sydney University (and an expert in such matters), who is now on the way to England, should be asked to visit France and Germany and make enquiries regarding stock diseases and their cures; and also that he should consult the leading veterinary authorities in England, and at the same time ascertain what scientists in England or on the continent are eligible to accept an appointment in the colonies as proposed by the Intercolonial Stock Conference, and what salary would have to be paid to a first-class man. The Minister proposes that Dr. Wilkinson be allowed not less than £250 for expenses in this mission. The Cabinet have approved of this minute, and Dr. Wilkinson will be duly communicated with.

INFLUENZA IN HOLLAND.—From a letter from Haarlem, the Influenza appears not to be confined to horses, for near there the cattle have been attacked. In some cases as many as twenty horses and cows at a time have been suffering from it. Several have died, and where they recover the animals feel the effects for some time.

THE GLANDER BACILLUS.—The bacillus of Glanders is destroyed by an exposure for five minutes to a five per cent. solution of carbolic acid or a one-fiftieth per cent. solution of corrosive sublimate. Every article used around horses having the disease should be disinfected with one of these germicides, or exposed to boiling water or steam at a temperature of 212 deg. F. for half an hour.

THE STRAITS SETTLEMENTS.—We learn that Mr. Burghope, M.R.C.V.S., has been appointed veterinary officer of the Straits Settlements, of which Singapore is the chief.

LOST DOGS AND RABIES.—At the annual meeting of the London Home for Lost and Starving Dogs, it was reported that the total number of dogs received into the Home last year was 24,123, being an increase of 8,802, as compared with the previous year. Undoubtedly the institution has done much to prevent the spread of Rabies, by clearing the streets of dogs most liable to be bitten by rabid animals, and it has in this way benefited the community. The muzzling order, it was stated, had greatly augmented the number of dogs sent to the Home during the latter part of the year, and threatened to overwhelm the resources of the institution. The most drastic means were taken to prevent the spread of Rabies, and among all the dogs received last year only thirty cases of the disease were detected.

INFLUENZA IN PORTUGAL.—According to the *Correio Medico*, the epidemic of Influenza which was thought to have come to end in February, has recently shown fresh signs of activity in Lisbon. Many horses have also fallen victims to the disease.

MORTALITY AMONG CATTLE IN EAST AFRICA.—Reports received from Zanzibar state that there is great mortality among the cattle at that place, numbers dying daily. And travellers in Masailand, Equatorial East Africa, mention that in consequence of a decimating plague which has prevailed among their cattle for fifteen years, much of the ancient combativeness and ferocity of the Masais have disappeared.

CATTLE POISONED BY CASTOR-OIL MEAL.—Dr. Eidam writes from the Agricultural Botanical Experiment Station of the Agricultural Association, Breslau, that complaints have been made of cattle falling ill or dying after eating linseed-meal. He analysed it, and found that in many cases it had been adulterated with ricinus-seed (castor-oil) and hempseed, the former of which contains poison.

BALTIMORE UNIVERSITY.—At the graduation ceremony on March 25th, Dr. Robert Ward presented the diploma in veterinary medicine to J. Lockwood, of England, the first graduate of the school.

A NEW PATHOLOGICAL LABORATORY IN PARIS.—At a meeting on February 24th, the Council of Public Health for the department of the Seine had under consideration a report from M. Alexandre, chief of the sanitary service, urging the establishment of a departmental laboratory, in which researches on the contagious diseases of animals could be carried out. It is proposed to ask the departmental authorities for a grant of money for the purpose,

TUBERCULOSIS AMONG ANIMALS IN GERMANY.—According to recent statistics, among 98,397 oxen and cows in Germany, 1,296 were found tuberculous—1·36 per cent.; of 143,218 calves, 35 were tuberculous, or 2 per 1,000; of 35,421 sheep and goats there were 7 tuberculous, or 1 in 5,060.

TRICHINOSIS AT KONIGSBERG.—From April 1st, 1881, to the same date in 1889, 253,566 hogs were killed in this German town. Of these 365 were trichinosed, being one in 694. This is a very much larger proportion—nearly double—than is found in the Central Abbatoir of Berlin.

Correspondence.

VETERINARY SURGEONS' LIABILITIES:

Look on this Picture and on That.

Sir,—For some time past an alarm has been felt in the veterinary profession, consequent on two law suits instituted against veterinary surgeons for examining horses and giving certificates of soundness, when shortly afterwards the animals were pronounced unsound. The actions-at-law were to recover the value of the horses—one for £380, the other for £175.

My object in penning these lines is to show some of the surroundings of each case, and the advisability of Veterinary surgeons being wise in time, and becoming members of the Mutual Veterinary Defence Society.

In the one case, a Veterinary surgeon examines a horse in respect to soundness; the examination is most carefully and thoroughly made, and a certificate of soundness given. For a short time it would appear the horse stood his work, and it was said, went sound; then he falls lame in his near fore leg. He is examined by two professors and two practitioners, who pronounced him to have Spavins, also a splint on his near fore leg, which must have existed anterior to the date of the first examination The case goes on for trial; the jury settle the case against the veterinary surgeon, who is thrown in costs to the tune of £500. Now this is a very serious amount for a plodding hard-working man of thirty-four years' standing to meet. Let us realize, if we can, the worry, anxiety, and torture of mind, hour by hour, night and day, during the whole of the time this trial is pending. Although he had two or three veterinary surgeons on his side, he was in reality by himself; he had to tread the wine-press alone, until the final result with its crushing responsibilities arrived. This case ought never to have been allowed to go into court.

Now let us turn to the other case. The veterinary surgeon examined a horse and gave a certificate of soundness, when in a few days two veterinary surgeons examined the animal and pronounced him unsound, he being, they say, a "whistler" and a "grunter." This veterinary surgeon is served with a writ for £380, and all the legal machinery is set to work. He, being a member of the Mutual Veterinary Defence Society, lays his case before the Council of this body. The case being carefully examined, and the Council being fully satisfied about it, take it into their own hands. The veterinary surgeon is then freed from all responsibility; his mind was at rest, his reputation was safe, and his property was not in jeopardy. This must have been an immense relief to him; he found in this a great moral support; all his worry, his anxiety, his torture of mind was removed; he felt himself safe, having placed himself and his case in the hands of a body of men able and willing to help him. The case goes on for trial, but finding it is defended with sagacity and firmness, it is withdrawn at the eleventh hour. Compare this case and its termination, with the one above; look on this picture and on that! My profession brethren may judge for themselves, and estimate the worth of such a Society.

These cases teach us a lesson to be more careful in the future in our examination as to soundness, and to be more discreet in the wording of our certificates. We must distinguish between matters of fact and matters of opinion. It is our duty to seek a solution of this difficult and dangerous question; it would be an inestimable blessing to our profession it we could overcome the common danger, by sagaciously having recourse to preventive

measures. Let thorough honesty of purpose be ever our guiding star, truth and practical wisdom for the purposes of life be our habitual discipline, and depend upon it we shall escape many of the pit-falls some of us become entangled in. But we must, with every care, be prepared for accusations and attacks.

THOMAS GREAVES, F.R.C.V.S.

STAMP DUTY ON MEDICINES.

SIR,—I am glad to see that my friend, Mr. J. Nettleton, has opened a discussion on this very important subject, which affects those of us who practise in the country.

We cannot expect that people will be so particular with what they drench their poor unfortunate animals; although it does not matter so much when they know what they are giving. The remedy given is often simple, and cannot do much harm. At least, they are able to tell the veterinary surgeon when he arrives what the animal has had, and what quantity of medicine has been given; for I am sure we are at a loss sometimes to know what has been administered, and therefore have no idea of the therapeutic action.

Evidently something must be done. The suggestion I would make, and which I think would benefit those of us who are practising in the country, is to advise our farmer clients to keep in stock linseed oil, Mag. sulph., Tr. opii, Sp. aeth. nit., Zinzib. R. pulv., Sulph. sub. pulv, and perhaps one or two other simple remedies in case of an emergency. It will not be necessary to tell many of them to keep the above by them, as I find in my practice that most of them do so; and seldom, if on a journey, and perhaps without any medicines, do I find a difficulty in getting some of the simple drugs mentioned.

A great deal depends upon ourselves. We can show them the utility of keeping one of our colic draughts, an inflammation drink, cleansing drink, and purgative drink by them; because, if these do not have the desired effect, they may be sure that something more is required. Even if we have to go, we have a much better chance when we know what the animal has had.

Some may say it is not good policy to advise farmers and others to keep some of the drugs just mentioned; but whether we advise or not, they keep them. In these days of advancement there are numerous books published, giving the management and treatment of the various disorders affecting the lower animals, and, consequently, we cannot stamp out a little amateur doctoring.

The country practitioner suffers the most, especially during a healthy season. There is not much doing; but if he had some dispensing to do, it would help to pay expenses.

It would be very much better for us if a lot of the "cure-alls," falsely so-called, had to pay for a stamp. We should not have so many cases to follow up and treat, often when called in too late. This, to us, is galling, for we know if we had been called in sooner we might have done some good.

Perhaps the person who has used the medicine says, "I will just try another dose of it; if it does not stop the pain and inflammation, I will send for the veterinary surgeon." We are often called in too late, owing to these various remedies having been used.

Sometimes it may not do us much harm in the event of another case, because they are afraid to trust to remedies they know nothing about, and dread relying on their own or their neighbours' skill, not wishing to risk again the price of a valuable animal. I might just mention a case, where a farmer and some of his sympathising friends tried to treat a case of obstruction of the bowels in a mare in foal. This mare had an obstruction, with symptoms of Colic. They gave a patent Colic draught, which I should say contained a

purgative. This had not the desired effect, so they gave another or two along with linseed oil. The mare began to purge three days after, and with great violence. After trying to stop the purging, by administering various remedies, such as starch, gruel, eggs, brandy, etc., they sent for me. When I got there I saw the case was hopeless. Mare, pulseless; V. M. M., pale; animal in a cold sweat; surface of the body and extremities, cold. In fact, the mare died within an hour after my seeing her. Since this case the farmer has always sent for me in time.

In every village and town there is some celebrated specific—the best Colic draught, the best kind of oils for either internal or external application, or a cleansing drink that has never been known to fail.

With regard to the faith some people have in certain remedies, I have heard them say, "You give that cow a quart of brewers' yeast," or "a pound or two of currants"; and sometimes if the cleansings do not come away readily, they burn a pair of old boots to ashes, grind them up, and give in one quart of old ale. This, they assure you, is a certain remedy.

We have plenty to contend against, without all these quack remedies.

The country practitioner's work is, at times, pleasant enough, but it is certainly not so when he is called out during the night to go and calve So-and-so's cow, when all the local talent have failed. And oft en, when successful in getting the calf away, we cannot remedy the injury inflicted previous to our going and doing all we can, having been called too late.

Our drug bills are certainly getting smaller. I suppose the chemists do a roaring trade. I think there are more drug travellers going about now than ever there were. And it is only fair to us that we should have a little of the smooth as well as the rough. We certainly prefer making up a few drinks of various kinds, to turning out on a stormy night with a long drive before us.

I do not think we can estimate the amount of money lost annually in valuable animals, whose lives might have been saved if professional aid had been called in sooner. Few of us make fortunes. We are not too well paid for the work we have to do, especially those of us who have country practices. It is a serious thing, where perhaps half the income was derived from the medicine sold.

I should be one of the last to advocate the selling of drugs to enable a professional man to make a living; but who has a greater right than the veterinary attendant in a country practice, to supply the various medicines required on the farms in the district? He has the difficult calving and foaling cases to attend to, the castrating, docking, firing, etc., to do—in fact, all the rough and unpleasant work, at all times and all hours. I think he can supply the medicines at a fair and reasonable charge, without underselling; and it will be good practice for the pupil or pupils to dispense the drugs. The practitioner knows the various remedies required in his district, the ones that are most useful, and he certainly has the advantage of knowing how to follow with the treatment after his remedies have been used.

It is not professional for a veterinary surgeon to advertise various remedies, and I should feel sorry for the man whose living had to depend on it. Old practitioners tell us they do not do half the dispensing they did years ago. How is this? The chemists, not content with the profits made on medicine supplied to the public, are trying to sell as much medicine as they can for the lower animals.

It may be that the practitioners in large towns do not care so much for dispensing, as they have plenty of other work—and not such long journeys, more contracts, examining, etc. Healthy seasons do not affect them so much as the country practitioner, who could often do with more dispensing. Therefore, a duty on horse and cattle medicines would benefit him.

York. GEORGE T. PICKERING, F.R.C.V.S.

CYSTIC CALCULUS.

SIR,—In response to Mr. Purdy's enquiry in THE VETERINARY JOURNAL, No. 177, vol. xxx., I beg to inform him that amongst the Cystic Calculi to be seen in the museum at the Army Veterinary School, Aldershot, one weighs 14⅜ ounces, and is of the following dimensions:—Length, 4 inches; depth, 2⅜ inches; breadth, 3¼ inches.

Aldershot. C. R. RUTHERFORD, F.R.C.V.S.

WHAT IS A FARRIER?

SIR,—Given a red rag pointed at a bull, or the term "farrier" as a synonym for a veterinary surgeon, and straightway each is put upon his mettle. Now the question, what is a farrier? has been canvassed lately upon perusing a scheme instituted by the Worshipful Company of Farriers, having for its object "the promotion of the technical instruction and registration of duly qualified shoeing-smiths throughout the country."

The question has turned on the argument whether the word *farrier* originally meant, or now implies, other than a horse-shoer. There can be little doubt that it meant in its earliest application, and as its derivation plainly suggests, a worker in iron, and particularly in connection with the *iron* horse-shoe; but the pursuit of this handicraft bringing the farrier into closer relationship with horses than other folk, there is nothing more probable than his also undertaking to doctor the ailments incidental to the feet which he shod; and if the feet why not the legs, and eventually the entire machine, outside and in? In this way the *ferrand*, the primitive horse-shoer, became the *maréchal*—the one authority and professor of farriery, doctoring, and equitation. Near upon two hundred years ago (it was A.D. 1696), there was a translation published by Sir William Hope of a work described as the last Paris impression of

"The Parfait Mareschal, or Compleat Farrier, which teacheth

"1, To know the shape and goodness, as well as faults and imperfections of horses;

"2, The signs and causes of their diseases, the means to prevent them, their cure, and the good and bad use of purging and bleeding;

"3, The way to order and preserve them when upon travel, to feed and to dress them;

"4, The art of shoeing according to a new design of shoes, which will recover bad feet and preserve the good."

And so the farriers, in their conjoint occupation, "kept the noiseless (?) tenor of their way," until the time arrived when the very terribly long word was assumed to distinguish the qualified surgeons who had passed the College.

The farriers by degrees have lapsed more and more into their original speciality of function as horse-shoers only, and now-a-days the veterinary practitioner is wishful to ignore those of the "old school," or the "no school" who once held sway in medicine.

Nevertheless at the present time there are many unenlightened, but otherwise most worthy individuals who stop not to ask questions of a distinction, and in whose mind's-eye veterinary surgery seems somehow associated with something akin to farriery.

Now this continuing confusion of identity is not altogether unnatural, seeing that veterinary surgeons, whilst dropping connection with the farrier *of the past*, are still combining the trade of the farrier *of the present*, along with the practice of the profession. Is not the farrier's shop a prominent feature still on the *establishment* of the professional man, and in many cases the sole

outward and visible sign of his whereabouts?—an anomaly which unquestionably holds him to a false position.

The *quondam* "barber surgeon" no longer clings to *barbery*, or would he still know the meaning socially of a *close cut;* and so long as the veterinary surgeon continues to traffic in the business of horse-shoeing, so long must he also expect to find himself socially *trodden on.*

This anomaly will remain until practitioners combine to retire from the business of the forge, and hand it over to its more legitimate claimants—the present *protegés* of The Worshipful Company of Farriers.

J. ROALFE COX.

THE NECESSITY FOR COMBINATION.

SIR,—The case of Mr. Snarry, if it proves nothing else, at least demonstrates the necessity for combination. It is too much to expect that members of the Royal College of Veterinary Surgeons who never join an association, and who take no interest in their profession, shall receive assistance when in trouble. The interchange of ideas which takes place at meetings improves the knowledge of all men, even of the best, whilst the personal friendships which they tend to foster may be of the greatest importance in the hour of professional need. Snarry's case may recur at any moment, and to the man who has isolated himself professionally, and who has to fight alone, it may simply mean ruin.

I would, therefore, earnestly impress upon those gentlemen who have no Association, to join the local one; upon those who do belong to one, but who do not attend regularly, to mend their ways.

THE PRESIDENT,
Southern Counties Veterinary Medical Association.

CORRECTIONS.

IN the review of Gresswell's "Diseases and Disorders of the Ox," in the last number of the Journal, the publishers should have been W. H. Allen and Co. In the same number, page 264, line 22, after "non-infected" add "regions."

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. M. Rusk, Washington; T. Greaves, Manchester; R. Ward, Baltimore; R. W. Burke, A.V.D., Woolwich; G. T. Pickering, York; F. Raymond, A.V.D., Woolwich; W. A. Hancock, Newcastle-on-Tyne; J. Hammond, Bale; J. A. Nunn, A.V.D., India; Prof. Smith, Toronto; C. B. Jones, Toronto; J. Mills, A.V.D., Chatham; J. Cooke, Scarborough; T. D. Broad, Bath; H. Kidd, Hungerford; S. Villar, Harrow; C. Rutherford, A.V.D., Aldershot; R. Barcham, North Walsham; J. Roalfe Cox, London; F. C. Mahon, Southrepps.

BOOKS AND PAMPHLETS: *Dr. F. Boschetti*, Legge dell' Ereditarieta; Bulletin et Mémoires de la Société Centrale de Médecine Vétérinaire; The Johns-Hopkins Hospital Reports; Fourth and Fifth Annual Reports of the Bureau of Animal Industry; *A. Ruffer*, On the Phagocytes of the Alimentary Canal.

JOURNALS, ETC.: *Moderno Zooiatro; Journal of the National Agricultural Society of Victoria; Thierarzt; Lancet; Echo Vétérinaire; British Medical Journal; Annales de Médecine Vétérinaire; Wochenschrift fur Thierheilkunde und Viehzucht; Live Stock Journal; Animal World; Clinica Veterinaria; Recueil de Médecine Vétérinaire; Revue Veterinaire; Journal de Medecine Veterinaire et Zootechnie; American Veterinary Review; Hufschmied; Journal of the Royal Agricultural Society of England; Deutsche Zeitschrift fur Thiermedicin und Vergleichende Pathologie; Field; Journal of Comparative Medicine and Veterinary Archives.*

NEWSPAPERS: *Baltimore Sun; Norwich Mercury; Scotsman.*